The Builder.

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The London Building Act.—Concluded.

THE provisions of Part XI. of the Act, concerning "Dwelling-houses on low-lying land," are in effect precisely the same as in Sections 5 to 9 of the "London County Council (General Powers) Act, 1893," which are repealed under this Act. Certain clauses in regard to the Tribunal of Appeal, in this part of the 1893 Act, are cancelled, because the provisions made by them are covered by the general provisons in regard to the powers of the Tribunal of Appeal in another part of the new Act, and the statement of the penalty incurred for infringement of this part of the Act is also relegated to the part dealing generally with offences against the Act. The only difference in wording from the existing provisions is in Section 123, where the words of the similar clause in the Act of 1893, "The Council may with the concurrence of the Tribunal of Appeal from time to time make and alter regulations prescribing the procedure to be followed in making applications," &c., are modified by the omission of the words "and alter." The omission is of no real consequence, as the power to "make regulations from time to time" includes the power of altering existing ones; but it may be taken as indicating an intention to avoid unnecessary or vexatious changes.

Part XII., dealing with sky-signs, is absurdly long and verbose, considering that, like the existing "London Sky-Signs Act" (now repealed), its only aim is to forbid the erection of any new sky-signs, and to place the existing ones under proper regulation during the limited period after which they must be removed altogether. So simple an object should hardly, one would have supposed, have required nearly six pages of an Act of Parliament to carry it out.

The provisions are essentially the same as at present. In the definition of sky-signs the only alteration is that from the phrase "above any house, building, or structure," the word "house" is now omitted (merely, of course, because it is superfluous).

In Section 128, corresponding with Section 5 of the "Sky-Signs Act," and dealing with the "Regulation of existing sky-signs," the first words run "from and after the commencement of this Act" (instead of "after the passing of this Act") "it shall be unlawful to retain any sky-signs," &c.; but the section proceeds to make the exception in favour of sky-signs erected in accordance with licences "granted or renewed before the passing of this Act," *i.e.*, before August 25, 1894. The distinction should be noticed, as in the Sky-Signs Act the "passing" and the "commencement" were identical, while they are not so in the present Act. An exception is made also, as in the existing clause, in favour of sky-signs under a licence renewed under the present Act "as hereinafter provided;" but it is to be noticed that the existing provision to the effect that no proceedings shall be taken in respect of an existing sky-sign while an application for a certificate or a renewal of licence is pending, is omitted in the new Act.

The law as to renewal of licences for sky-signs now stands thus:—

A licence granted under the "Sky-Signs Act, 1891," and renewed under that Act may, on the expiration of the period of renewal, be again renewed for two years and no more.

A licence granted under the "Sky-Signs Act, 1891," as amended by Section 17 of "The London County Council (General Powers) Act, 1893," after August 24, 1893, may be renewed at two years from its date of issue for two years more, and after that for another period of two years (six years in all from the original term of the licence), but no longer. (This clause takes the place of the first clause of Section 8 of the "Sky-Signs Act.")

The provision for the case of a person desirous of renewing his licence for a sky-sign, and applying to the surveyor for an inspection and certificate, is identical in effect with the second clause of Section 8 of the "Sky-Signs Act," with some unimportant differences in wording. This is followed (Section 129, Sub-section 5) by the provision that after such inspection the surveyor shall either grant a certificate "that in his opinion the sky-sign is so placed, constructed, and supported, as not to be likely to involve danger to the public," or he shall refuse to grant such certificate, in which case he must state the grounds of his refusal. Then follow the forms to be adopted in the certificate in each of the two cases. The applicant, in case of his refusal, may (as under the "Sky-Signs Act") make repairs to or alterations of the sky-sign, and demand another survey. The directions for the action of the surveyor in such case, and the amount of his fee, are the same as in the "Sky-Signs Act," as also the right of the applicant to appeal, but to the "Tribunal of Appeal," not (as at present) to the Council. The remainder of the provisions are the same as in the "Sky-Signs Act," except that in Section 124 (corresponding to Section 14 of the "Sky-Signs Act"), while the sky-sign is to be treated as "a structure certified to be in a dangerous state under Part IX. of this Act" (corresponding to Part II. of the 1855 Building Act), it is specially added that "the provisions of the said part with regard to arbitration shall not apply," and it is lawful for the Council (on obtaining the order of a Petty Sessional Court) to take down the sky-sign. The last sentence of the section, however, is altered from the corresponding one in the "Sky-Signs Act": instead of running that the expenses shall be recoverable "as expenses incurred in respect of a dangerous structure," it now stands "shall be recoverable as though the same were a penalty imposed by this Act."

Part XIII. states with great fulness and precision the position, duties, and powers of the Superintending Architect and the District Surveyors. Section 136 defines the position and duties of the Superintending Architect to the same general effect as in Section 62 of the 1855 Act, along with the provision (from Section 64, 1855), that the Superintending Architect and his clerks shall be paid "such salaries as the Council may direct," and the addition of a clause directing that the person who is the Superintending Architect at the commencement of this Act shall continue to occupy that position under the Act. The Section (63) of the 1855 Act, which empowers the Superintending Architect to appoint a substitute in case of illness, infirmity, or other unavoidable cause preventing him from attending to his duties, is repeated in Section 137 of the new Act.

The Sections defining the duties of District Surveyors include most of the provisions to be found in Sections 32 to 54 of the 1855 Act, but with a considerable re-arrangement of clauses, some new requirements, and some minor differences of detail.

Section 138 states directly and precisely what is implied, but not so directly stated, under the existing law—viz., that, subject to the provisions of this Act and the exemptions contained in it, every building and structure and the work done on it and all matters relating to width and direction of streets, line of buildings, open spaces about buildings, and height of buildings, shall be subject to the supervision of the District Surveyor of the district in which the work is situated.

Section 139 defines the powers of the Council as to District Surveyors and districts on the same lines as in Section 32 of the 1855 Act, with the following alterations: (*a*) the words "with power from time to time to alter any district so made" are omitted (they are in fact superfluous, as the words "may alter the limits of any district" cover the provision); (*b*) the consent of a Secretary of State is no longer requisite for the dismissal of a District Surveyor, except in cases where his appointment dates from before August 14, 1855 (the passing of the 1855 Act), and the separate provisions for the dismissal of "any existing Surveyor" and "any future Surveyor" are both included (with more logic) under the single phrase "may dismiss any Surveyor;" and (*d*) the compensation to be paid to any District Surveyor who may be deprived of his office by an alteration in the limit of a district shall "in case of disagreement" (between the Council and the Surveyor) be determined by the Tribunal of Appeal.

Sub-section 2 provides that, subject to the foregoing provision, the limits of districts remain as they were before the commencement of this Act, and the District Surveyors now in office continue to be District Surveyors under this Act.

To the provision that the District Surveyor shall maintain an office in such part of his district as the Council approve, it is added that the Council shall inform the Local Authority of "any change in the office of the District Surveyor." It is rather awkward that the word "office" is used on the same page in two perfectly different meanings. Here it means, of course, his place of business, but a few lines above we read that "on a vacancy occurring in the office of a District Surveyor they (the Council) may appoint another qualified person in his place" (139 c: 32 (3) in the 1855 Act). Of course one knows what this means, but it has an awkward appearance as a matter of wording, and taken in conjunction with Section 141 might be read as if the Council were to appoint the District Surveyor's clerks.

Section 145 repeats the provision of Section 38 of the 1855 Act as to the two days' notices to be given by a builder to the Surveyor, but re-arranges the clauses so as to make the conditions much more distinct, reads, "building or structure" in place of "building,"* and inserts the word "clear"—"two clear days" instead of "two days." The latter part of the section, however, contains some important alterations. In place of "the builder engaged in building or rebuilding such building," we have "the builder or other person causing or directing the work to be executed" (see in regard to this the remark in a previous article as to the new definition of the "builder"). The direction that he shall serve on the District Surveyor "a building notice" introduces a new phrase which defines a certain class of notice, and distinguishes it from another to be referred to hereafter; and a "building notice" is to state, in addition to the information at present required, the number of "storeys," and the name and address not only of the person giving the notice (as at present), but those of "the owner then in possession, and of the occupier of the building or structure or of its site or intended site."

In the Section (146) prescribing the action of the District Surveyor in regard to buildings in progress, the words "the provisions of this Act or by-laws made thereunder" are substituted for the present words "the rules of this Act," thus defining the power of the Surveyor to act on by-laws as well as on the Act.

Section 148 repeats the provisions of Sections 42 and 43 of the 1855 Act (omitting the penalty clauses, which are relegated to another part of the Act), but with the addition that the Surveyor may enter on the works not only during their progress, but "during fourteen days next after the completion" of the work."

Section 150 is a new provision. It specifies that when the "building notice" served on the Surveyor renders it apparent to him that anything is proposed in contravention of the Act, or any requirement of the Act omitted, he is to serve the builder or building-owner with a "notice of objection," and the builder or building-owner may appeal against it in a Petty Sessional Court within fourteen days. The Court may make an order either affirming the objection or otherwise.

Section 151, corresponding with 45 of the 1885 Act, in regard to contraventions of the law discovered by the Surveyor when a building is in progress, is identical in its provisions, but describes the notice to be given to the builder in this case as a "notice of irregularity." It is to be observed that in this section the expression of the 1855 Act, "the builder engaged in erecting such building," &c., is retained, instead of the new phrase "the builder or other person causing or directing the work to be executed," introduced in Section 145. There seems no sort of reason why the phraseology should differ in the two Sections, and we must probably set this down, like some other verbal anomalies already mentioned, to mere carelessness in drafting; but it is to be regretted, and may cause trouble.

We have now three classes of notices distinctly defined in the Act for various purposes: a "Building Notice" (from builder on Surveyor), a "Notice of Objection" and a "Notice of Irregularity" (from Surveyor on builder). This classifying of notices under a distinct nomenclature is a very good point in this portion of the Act.

Section 152 is a piece of new legislation calculated to induce owners and intending occupiers of buildings to keep their builder in the paths of lawful building, since otherwise they are liable to have his transgressions visited on themselves. The section provides for the service of notices of irregularity after the completion of a building and after it has ceased to be under the control of the builder. Clause (*a*) provides that if a notice of the date at which a building has ceased to be under the control of the builder has been served on the District Surveyor by the builder or owner, a "notice of irregularity" may be served within fourteen days* on the owner or occupier "or other the person causing or directing or who has caused or directed the work instead of or in addition to the builder (if any)." Clause (*b*) provides that where such a notice of the completion of the building has not been served on the Surveyor, he may serve a "notice of irregularity" on the owner or occupier, &c. (as defined in the preceding clause) within twenty-one days after the completion of the building. These are salutary clauses, but the second one (*b*) is likely to be totally inoperative from the extraordinary oversight of not providing any definition of the "completion" of a building. In the case of clause (*a*) of course the notice given by the builder or owner constitutes a statement that the building was "completed" on that date; but where there is no such statement, who is to decide on the particular day when the building is to be legally defined as "completed?" No special power is given to the Surveyor to do so. It is really extraordinary that in an Act in the framing of which legal advice is supposed to have been concerned, such a hole as that should have been left.

Sub-section 2 of the same section provides for the case when the owner of the building does not allow the builder to comply with a "notice of irregularity;" the latter may serve a notice on the Surveyor to that effect, and the Surveyor within fourteen days may serve the "notice of irregularity" on the owner or occupier. The consequences of a notice served on the owner are the same in this case as in that of the builder. But it is provided (Sub-section 4) that nothing in this Section shall prejudice any remedy of owner, occupier, or other person against the builder.

Section 153, defining the consequences of failing to comply with a "notice of irregularity" are (except the penalty clause) the same as provided in Sections 46 and 47 of the 1855 Act, though rather differently worded; the only important difference being that "the Council" instead of "the District Surveyor," may after seven days' notice enter with workmen on the premises, &c. This seems to imply that the District Surveyor is not to take this procedure into his own hands unless under the special orders of the Council as their representative.

Section 154, as to the fees to be paid to the District Surveyor by the builder, owner, or occupier, is the same in effect as Section 49 of the 1855 Act, but differently worded, and the clause providing that one fee only shall be charged in respect of works included in one notice is omitted. In regard to laying out streets, lines of building frontage "and any such-like service" (corresponding to the "special service" of Section 50 in 1855 Act) the District Surveyor shall receive "such fees as the Council shall from time to time determine," but the clause to the effect that the Surveyor shall have the same remedy for recovering such fees as if they were specified in the schedule is dropped from the new Act. Section 156 makes a new provision in regard to fees to the Surveyor for the preparation of evidence, and giving evidence before the Tribunal of Appeal; these fees are to be settled by the Tribunal of Appeal. The ordinary fees due to the Surveyor from the builder, owner, or occupier, are payable (Section 157) as under Section 51 of the 1855 Act, but in the "special service" clause the words run "in respect of any building structure or land," in place of "building" only.

The power to pay District Surveyors by salaries instead of by fees is retained by Section 158 (corresponding to Section 65 in the 1855 Act), but the amount of the salary is to be based on the average of the last seven years' fees, instead of "the last three years" as at present, and the fees in that case will not pass, as at present ordered, through the hands of the Surveyor into those of the Superintending Architect (to be accounted for by him to the Council), but are to be payable direct "to the Council," to be placed to the credit of the county fund. A sub-section (2) repeats the provisions of Section 67 of the 1855 Act, that the Council may at any time provide either wholly or partially for the payment of salaries to the District Surveyors "or to any of them" out of the county fund, and thereupon abolish or reduce the fees made by this Act payable to the Surveyor. The phrase "or to any of them" gives power, obviously, to pay the surveyors by salary in some districts though not in all, a provision which is no doubt suggested by the consideration of the great difference in the circumstances of different districts; where a large amount of building or rebuilding is going on, the Surveyor would realise a considerable amount in fees in the course of the year, while in a settled district where there is little building the fees might hardly pay the office expenses.

The regulations as to the monthly reports of the surveyors and their examination by the Superintending Architect (Sections 160-162) stand as at present in Sections 52-54 of the Act of 1855, except that in the clause

* The word "structure" is added throughout this part of the Act, wherever the word "building" alone was used in similar provisions in the 1855 Act.

* Hence, no doubt, the provision under Section 148 (1) that the surveyor may enter on the building fourteen days after its completion.

as to the examination of the monthly returns by the Superintending Architect the words "from time to time" are omitted in the new Act. The omission of the words (which were quite unnecessary) seems to imply that the examination is to be made as each month's accounts come in, and not at longer or irregular intervals.

Two other new provisions remain to be mentioned in this portion of the Act. Section 159 provides that the Council may, if they think fit, undertake on behalf of a District Surveyor any proceedings which would otherwise be undertaken by such Surveyor, or pay the costs incurred by him in any proceedings under the Act. The wording, it will be observed, leaves it open to the Council to decline to do this in cases where the Surveyor may have incurred unnecessary expenses by indiscreetly taking action which could not be sustained at law. And Section 163, which is an important one to District Surveyors, makes it the duty of the Surveyor to at once notify to the Council any actual or probable contravention of any provisions of this Act with which he is not himself competent to deal, and which he has either noticed himself or received information of. In short, the Surveyor is to be eyes and ears to the Council, and keep a general look-out for any kind of infringement of the building law, whether within his own province or not.

Although, as already observed, the power to pay District Surveyors by salaries instead of by means of fees is kept in view in the new Act, there is no indication whether or not the County Council have any more leaning in that direction than before. It may be suggested here that it is well worth the consideration of the Council whether it would not be better to adopt the salary system all round, and abolish the fees as payable to the District Surveyor. The fees might still be charged and be recoverable by the Council, since it is both equitable and economical that those who attempt to evade the law should pay the cost of keeping them in order. But there would be much less friction and "bad blood" between builder and Surveyor if the fees, which amount in fact to a kind of fine, were paid to the corporate body rather than to the Surveyor personally. To be found out in an illegal procedure (especially when it may have arisen from ignorance or oversight) is annoying, but to have to pay the man who found you out is almost too much for human nature to endure with equanimity. The salaried position would surely also be a much more dignified and honourable one for the District Surveyor, who could then never feel (as he must often feel now) that he was regarded by builders and building-owners as a person on the look-out to make something for himself out of their lapses from virtue; and considering the class of professional men who seek, and who alone have any chance of obtaining, the office of District Surveyor, it can hardly be considered necessary to encourage them to the strict exercise of their duty in the same way as the men who tap the wheels of railway carriages are encouraged by the hope of a half-sovereign when they can discover a cracked tire. We were indeed told once of a case in which one District Surveyor had in his first year of office doubled the income made by his predecessor, which (if true) implied either that he had been very astute or his predecessor very lenient. But we may certainly conclude this was a very exceptional case on either side, and that the District Surveyors of London generally need no stimulus of fees in proportion to work done to induce them to do their duty, although *Punch* once had the stupidity to represent them as persons who would compound matters with the builder over a glass of beer!

While on this subject it may be observed that the County Council are to be congratulated on having turned a deaf ear to the advice given them from some quarters, to refuse to District Surveyors the right of private practice as architects, and reduce the District Surveyor to a mere paid official of the Council. The result of such a policy would infallibly have been to place the whole supervision of the building operations of London in the hands of men of far inferior standing and ability to those who now have charge of it.

Part XIV., in regard to by-laws,* defines (Section 164) the subjects in regard to which the Council may in future make by-laws not repugnant to the provisions of the Act. These subjects may be briefly summarised thus: Plans and sites of streets and buildings; forms of notice and other documents; foundations and sites of buildings, and mode and materials with which they may be made or filled up; thickness and quality of substance of walls; dimensions of wooden bressummers and of joists of floors (iron joists we presume are excluded because practically they must be taken in the sections rolled or rivetted by manufacturers); protection of constructional ironwork from fire; woodwork in external walls; description and quality of plastering; filling in of an excavation within 3 ft. from the external walls of buildings; lamps or signs overhanging the public way, except within the City (by-laws on this point, however, to be administered by the Local Authority); means of escape from fire in buildings over 60 ft. high; duties of District Surveyors in relation to by-laws; deposit of plans of buildings with District Surveyors; and fees of District Surveyors in respect to their duties under by-laws.

Penalties for offences against by-laws are defined by this section as not exceeding 5*l.*, and not exceeding 2*l.* per day for continuance of the offence; amount to be summarily recovered.

Sub-section 2 repeats the present provision that the Council may make by-laws stating terms and conditions of exemption from the observance of any of their own by-laws, if they think proper; and by Sub-section 3 every by-law must be confirmed at a meeting of the Council subsequent to that at which it "shall have been made" ("shall have been framed" would be the more correct expression, as the by-law is not "made" until it comes into force), and the by-law shall have no force or effect until it is allowed by the Local Government Board. It is to be observed that this condition of confirmation or "allowance" by the Local Government Board takes the place of the present requirement that a by-law shall be confirmed by one of Her Majesty's Secretaries of State. The intention to apply to the Local Government Board for this purpose is to be announced by public advertisement two months before such application, and a copy of the by-law is to be sent to the following bodies:—the Local Authority, the Ecclesiastical Commissioners, the Royal Institute of British Architects, the Surveyors' Institution, the London Chamber of Commerce, the Institute of Builders, "and such other societies as the Local Government Board may direct"; and for one month before such application a copy of the by-law is to be accessible for public inspection at the County Hall.

By-laws "made, confirmed, and allowed," are to be published in the *London Gazette* and printed and hung up in the County Hall for public inspection, and copies sold for a charge of not more than 2d. The by-law to come into operation at a date fixed by the Local Government Board; but the production of a printed copy of the by-law with the seal of the Council is to be accepted as a proof that it has been duly confirmed and allowed.

No by-law in respect of any matter from which the city is exempted by the Act can have any effect within the City.

These provisions no doubt fulfil all the usual claims in regard to what is called "publication," and the sending copies of the by-laws to the representative bodies of architects, surveyors, and builders, brings them officially under the notice of those bodies; but there will nevertheless be a good many persons whom a by-law will practically affect, who will not be certain to hear of it by the means proposed; and it has been objected very strongly, and not without reason, that the posting up of a by-law at the County Council offices (or "County Hall") is only a very perfunctory way of bringing it under the notice of the part of the public who may be affected by it, many of whom may not hear of it until it becomes law. The "publication" would have been much more effectual in this respect if, in addition to the other means of publication named, it had been ruled that intended by-laws should be published also in such journals as deal specially with architectural and building subjects, and a good deal of possible inconvenience would be saved to many architects and builders if this course had been adopted.

Part XV. deals with Legal Proceedings and the Tribunal of Appeal. Some portions of this are concerned with purely legal provisions which are not of direct interest to our readers. Section 167 provides that any legal proceedings commenced by a District Surveyor may be continued by his duly-appointed deputy or successor; and Section 170 is a general provision as to the powers of the Council in case of offences in the way of constructing or extending, altering, uniting, or separating a building in any manner not in conformity with the Act. This section gives the general power to the Council, after allowing fourteen days to bring the structure concerned into conformity with the Act, to obtain a summons from a Petty Sessional Court, "notwithstanding the imposition and recovery of any penalty," requiring the person concerned to appear and answer the complaint, and if the complaint is proved to the satisfaction of the Court, to obtain an order authorising the Council to demolish or alter the structure where not in conformity with the law, to remove the materials and to sell them, and to recover from the defaulting person all expenses of the procedure not covered by the sale. If the sale more than covers the expenses incurred, the balance is to be restored to the owner of the structure. In the case of a structure erected illegally beyond the general line of buildings the Local Authority may exercise these powers in like manner as the Council. Section 172 repeats the provisions of Section 76 of the 1855 Act, in regard to the case where no demand is made by anyone professing to be legally entitled to claim the surplus.

Section 173 is an endeavour to put upon an equitable footing the rather difficult question of the responsibility of "owners" and "occupiers" in regard to recoverable expenses. The word "owner" includes the adjoining and building-owners respectively, and the owner "immediately entitled to the possession of the premises," or the occupier, is in the first instance to pay the expenses, with a repetition of the existing limitation that the occupier shall not be called upon to pay any sum greater than the rent due from him in respect of the premises during the period of his occupancy, which amount (under Sub-section 5) he may deduct from the rent payable by him to the owner of the premises. The phrase "during the period of his occupancy" seems somewhat vague; how if he is a tenant from year to year? What is the reading then? The opportunity ought to have been taken to get rid of or amend a provision so very loose and un-legal in character. If there are successive owners each of them is liable to contribute to the expenses in proportion to his interest; and if some owners cannot be found the deficiency so arising is to be divided amongst the owners who can be found. This may be law, but is it "equity?" It seems likely to lead to a good deal of non-finding of owners. Payment of such expenses can be recovered in a summary manner (Sub-section 6) from the person liable in

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* We regret to see that while the "Royal Assent" copies of the Act adopted the correct spelling, "By-law," in the copies for public circulation the incorrect and unauthorised spelling "bye-law" is revived.

the first instance under the Section; and expenses which should be repaid by the person ultimately responsible are recoverable "as if the obligation were a simple contract debt." All differences arising as to the amount of contribution under this Section are to be decided by arbitration.

Section 174 provides for the case of periods falling due during the vacation. When any period, within which sanction or approval is to be given by the Council in respect of any matters arising under Part II. or Part V. of the Act ("Formation and Widening of Streets" and "Open Spaces about Buildings and Height of Buildings"), would expire on any day between August 8 and September 14 (both inclusive), such period shall be deemed to be extended for twenty-eight days.

The Tribunal of Appeal, defined in Section 175, is to consist, as already observed, of three members, appointed respectively by a Secretary of State, by the Council of the Institute of Architects, and by the Council of the Surveyors' Institution, and it is specially provided that no member or officer of the Council (*i.e.*, London County Council) shall be a member of the Tribunal. Members of the Tribunal shall be appointed for a term of five years, but may be re-elected, and a member of the Tribunal may be removed by the Lord Chancellor "for inability or misbehaviour or other good and sufficient cause." In case of a vacancy occurring through the unavoidable absence of a member of the Tribunal, the authority or body by whom such member was appointed shall appoint some one to act in his place, whether temporarily or otherwise.

The remuneration of members of the Tribunal may be either by annual salary or by fees, as a Secretary of State may from time to time appoint. The Tribunal may appoint such clerks and other servants as they require, whose salaries will be determined and paid by the Council. The Council may defray the expenses of supporting any decision of their own or of their Superintending Architect or Engineer before the Tribunal.

The Tribunal may (or shall if required by the High Court or a Judge on the application of any party to an appeal) state a case for the opinion of the High Court, which may reverse, affirm, or amend the judgment of the Tribunal. Subject to that provision, and to the general provisions of the Act, the Tribunal will have jurisdiction and power to hear and determine appeals referred to them under the Act, and power to hear counsel, administer oaths, receive evidence, call for documents, &c., and make orders as to costs of appellants; and may also from time to time (subject to the approval of the Lord Chancellor) make regulations consistent with the provisions of the Act as to the procedure to be followed in cases of appeal. Any order of the Tribunal may be enforced by an order of the High Court as if it were an order of that Court. All sums paid to the Tribunal are to be paid over to the Council, and the whole expenses of the Tribunal, including salaries or fees, are to be paid out of the County fund.

On the whole we may say that the Tribunal seems likely, as thus constituted, to be a satisfactory machine for the arbitration of differences, provided that the right men are appointed to it. In regard to the method of remuneration, we should think it very much preferable that the members of the Tribunal should be paid by an annual salary; they are, within the limits of their powers, to occupy a position almost like that of Judges in an Appeal Court, and they should be placed in a similar independent position.

From the wording of Section 178 (as to the appointment of members to fill temporary vacancies) it appears to be assumed that the Tribunal must always sit in full, and that two of the members cannot form a quorum. If this is so intended, it would have been preferable that it should have been distinctly so stated, as there appears to be some room for a difference of opinion on this point being raised, although the logical deduction from the the wording of the Act seems to be that all the members must act together. Another point on which a question might be raised is, whether the judgment of the Tribunal is to be a judgment of the majority—of two out of the three members, as in an appeal court—or whether they must all concur in a judgment to render it valid. This is a very important point, which seems to have been overlooked in the Act.

The regulations as to the serving of notices (Sections 187, 188) are much the same as those in force at present; the only additions are that the general regulation is stated to apply to all notices "the service of which is not provided for by the 'Summary Jurisdiction Acts,' the 'Lands' Clauses Acts,' or the 'Companies Clauses Consolidation Act, 1845';" that a notice to a railway company may be served by delivering a copy to the secretary at the principal office of the company; and that a notice to a District Surveyor, if posted, must, like other notices under the 1855 Act, be registered. Section 187 also makes the special statement that a notice must be "in writing," which, considering the terms of the following section, seems superfluous.

A variety of provisions are included under the heading of "Miscellaneous" (Part XVI., Sections 189 to 199). The first section is a repetition of an existing provision to the effect that all expenses incurred in carrying this Act into execution and not otherwise provided for are to be deemed "general expenses incurred by the Council," and to be raised and paid accordingly. Section 190 gives the Council the option, in all cases in which they are authorised to refuse consent to any Act, of giving their consent on certain terms and conditions, the non-observance of which will subject the offender to a penalty.

Section 191 may be said to be the only clause in the Act which is actuated by æsthetic motives, and as such merits quotation:—

"191. In the event of its being necessary to take down any portion of an old building of architectural or historical interest constructed otherwise than in accordance with the regulations of this Act or in the event of the destruction of any part of such building the part so taken down or destroyed may with the consent of the Council first obtained be restored in the same material and in the same design as it formerly was."

This is well intended, no doubt, and we must credit the framers of the Act with having gone a little out of their way to show, according to their lights, some regard for the historic interest of ancient buildings; but we fear that this æstheticism, like Hamlet's "courtesy" to Osric, "is not of the right breed." If the Act had contained any provision for promoting the preservation of ancient buildings, and throwing difficulties in the way of their destruction, it would have been more to the purpose. But to provide specially for the rebuilding of an ancient building or any part of it, just as it was, is only to promote the production of historic shams, which are worse than valueless.

Section 192 empowers an owner or builder and his servants to enter any building for the purpose of complying with any notice or order under the Act, after giving seven days' notice to the occupier, and after that from time to time on the production of the original notice; and 193, a rather important clause, defines the limit of time of action of the Surveyor in cases where no "building notice" (or other notice requisite under this Act or under a by-law) has been given. The surveyor may enter the premises to examine the building or the work within one month after he has discovered that it is being carried on, and the time during which he may take any proceedings under the Act in respect of such a building shall begin to run from the date of his making the discovery. This Section seems much misplaced under the head of "Miscellaneous," and has the appearance of having been framed to fill a gap in the provisions of Part XIII., not noticed when that Part was under consideration, and then thrust in among "Miscellaneous" to avoid disarranging the numbering of the preceding sections. It certainly ought to have been connected with the other sections defining the powers of the Surveyor, because in fact it constitutes an important modification of Section 146, which provides that the District Surveyor may at all reasonable times survey a building which is being carried on, whether notice has been given him or whether the work has only been "observed or made known to him." But here, a good many pages later, and in an entirely different part of the Act, there is sprung upon the Surveyor an entirely new condition, not hinted at before, to the effect that he must take action within one month after he has discovered the work. To separate two such provisions, the effects of which are so intimately connected, is surely a very faulty arrangement of a document.

By Section 194, applications, plans, and other documents delivered at the office of the Council or to the District Surveyor, in pursuance of this Act, become the property of the Council; and the approval of the Council of any plans or particulars (195) is to be signified in writing by the Superintending Architect.

Section 196 repeats the provisions of Section 96 of the Act of 1855 in cases where the owner cannot be found, though it is noticeable that the words, "having regard alike to the nature and purpose of the subject-matter, in respect of which such consent is given, and to the fair claims of the parties on whose behalf such consent is to be given," are omitted in the new Act; perhaps because it is considered that any judgment of a Court would necessarily be given under such conditions.

Section 197 deals with the storing of wood or timber. It prohibits the placing of piles or stacks of uncut timber, lathwood, firewood, casks, &c. (whether under or above ground), nearer to a street than the general line of buildings thereon, except where such a stack stood on January 1, 1894. By Sub-section 5 timber-yards existing at the commencement of this Act must comply with the provisions of this Section within two years from the date of the passing (not commencement) of the Act, but the Council have power to prolong the term to seven years, or to relax any of the provisions of this section.

Sub-section 2 prohibits the storing of the materials mentioned in Sub-section 1 in the same yard or premises as any furnace except (*a*) where the furnace is enclosed in a building of fire-resisting materials; (*b*) where the furnace is at least 10 ft. from the said materials. In continuance the same Section provides that such materials shall not be piled to a height of more than sixty feet from the ground-level, and shall have no room or chamber or space among them, other than a passage, "for any purpose whatever." This Section does not apply to such materials when piled on land belonging to railway companies, canal companies, or dock companies, for the purposes of their undertakings.

Sections 198 and 199 repeat existing provisions as to the proceedings in respect to a building not being affected by the falling in or removal of the roof, and as to the placing of posts, rails, or otherwise impeding street traffic, in the same terms as at present. This latter section (199) does not apply within the City.

Section 200 sums up the penalties for infringements of the Act, which are thus conveniently grouped together, instead of being dispersed, as in the existing Acts, in connexion with the various separate provisions. The penalty for offences in regard to the laying out or obstructing of streets is reduced from 20*l.* to 10*l.* in the first instance, but with the serious addition of a daily penalty of 2*l.* during the continuance of the offence. Neglect for twenty-eight days to comply with a notice to set back a building involves a penalty of 2*l.* to 5*l.*, and a

daily penalty of 10s. to 2*l*. Infringement of the provisions of Parts III., V., VI., and VII. of the Act involves a penalty of 20*l*. Obstructing the entry of persons empowered to enter on premises to execute any work authorised under the Act involves a penalty of 10*l*. These are the same as under the existing law. A building-owner failing within a reasonable time to make good damage to an adjoining owner's property, is liable not only to the penalty of 20*l*. a day under the existing law, but to an initial penalty of 20*l*. (This is possibly intended to mean the same thing as 20*l*. a day, *i.e.*, 20*l*. for the first day, and 20*l*. for every subsequent day; it is not very clearly put.) Anyone refusing to admit the purchaser of any materials sold under the Act is liable to a penalty of 10*l*., and a daily penalty of 5*l*.

The penalty for erecting buildings within the prescribed distance from buildings used for dangerous or noxious businesses is the same as under the Act of 1844: 50*l*. and a daily penalty of the like amount; and the same penalty for establishing a dangerous or noxious business contrary to the provisions of the Act. The penalties for unlawfully building dwelling-houses on low-lying land also stand as at present.

Any one not complying with the conditions (Section 190) under which a provision of the Act is relaxed by the Council, is liable to a penalty of 10*l*.

A penalty of 2*l*. and a daily penalty of the same amount is attached to the following offences:—Erecting or retaining a sky-sign contrary to the Act; failing to serve a "building notice" or commencing the work after it before two clear days are out; refusing to allow the District Surveyor to inspect a building or to afford him all reasonable assistance in such inspection; failing to comply with any County Court order in pursuance of the Act within the time named in the order; refusing to admit a builder to comply with an order under the Act; being a workman, doing anything about a building contrary to the Act without the knowledge or consent of the person causing the work (this appears by implication to exonerate the workman if he does it *with* the knowledge and consent of his employer—a rather doubtful position); refusing to admit any owner, builder, or his servants to do things authorised by the Act; transgressing any of the provisions as to the storing of wood or timber; and generally doing any other thing prohibited by the Act or failing to do anything required by its provisions.

Finally, there is a penalty of 10*l*. and a daily penalty not exceeding the same amount against any one who without the consent of the Council converts or uses a building "contrary to any of the provisions of the section of this Act (Section 211) of which the marginal note is 'Rules as to conversion of buildings;'" which will be referred to in its proper place.

The whole "Penalties" Section is governed by the closing clause, "The liability to these penalties shall be without prejudice to any other proceedings whether under this Act or any by-law under this Act or otherwise but so that no person shall be punished twice for the same offence."

Section 201, headed "Application of Act," gives the list of structures exempted from the operation of the Act. Most of the existing exemptions are confirmed, but with some differences of wording and arrangement. "Greenwich Hospital," for instance, does not appear in the list, but it is by implication included in the altered form of the clause exempting "Her Majesty's Royal Palaces," &c., which now runs thus:—"Every building, structure or work vested in and in the occupation of Her Majesty, her heirs and successors either beneficially or as part of the hereditary revenues of the Crown or in trust for the public service or for public services." The British Museum is included in a general clause exempting any building "vested in or in the occupation of any department of the Government, or of the Metropolitan Police, or of the trustees of the British Museum for public purposes or for the public service." The Bank of England is exempted, but the large-hearted clause in the 1855 Act, exempting "any of the offices or buildings hereafter to be erected for the use of the said Governor and Company, either on the site or in addition to and in connexion with the said edifice," is (as we might expect) dropped. The buildings and properties of the Honourable Societies of the Inner Temple, Middle Temple, Lincoln's Inn, and Gray's Inn, are exempted from the Act, but it is significant that in the list of "repeals" in relation to the "Metropolis Management Act, 1878" (which is only partially repealed) we find that in Section 26, which exempts either from the Act or from by-laws under it, the Societies first named, as well as Staple Inn, Furnival's Inn, and the close of the Collegiate Church of Westminster, the words "or in any by-laws of the Board thereunder" are repealed, and a similar repeal is made in the succeeding section of that Act relating to Crown properties. This, however, would not bring such properties under the by-laws of the new "Building Act." It should be added that the exemption of the above-named four "Honourable Societies" in the new Act is qualified by the provision that they shall be subject to the provisions of Part III. of the Act ("Lines of Building Frontage") in respect of any building structure or land which abuts on any public street, place, or way.

The existing exemption clause as to "common gaols, prisons," &c., does not appear, nor is there in fact any mention made of prisons unless they are included under buildings vested in the Government or the Metropolitan Police for public service. Subsection 5 exempts the Sessions House at the Old Bailey and all other Sessions Houses or other public buildings belonging to or occupied for public purposes by the Justices of the Peace for the counties of Middlesex and London and the City of London, or by the County Councils of London and Middlesex respectively.

For "the cattle market" the Sub-section (7) substitutes "the buildings of the Metropolitan Cattle Market and of the cattle market at Deptford," and any buildings within their premises occupied by any officials of the Corporation for the purposes of those markets.

The entirely new exemptions are as follows:—Any building belonging to a gas company and used exclusively for gas-works; any building used as a workshop or store by the conservators of the river Thames; foundations and walls of buildings belonging to a railway company situate over any station or works of a railway company, or immediately adjoining any railway or railway works and on land acquired under an Act of Parliament; buildings within the station premises of a railway company inhabited in whole or in part by any official of the company. These may be considered almost formal clauses; the following is an entirely new and important one:—

"(10) Buildings not exceeding in area thirty square feet and not exceeding in height five feet in any part measured from the level of the ground to the under side of the eaves or roof plate and distant at least five feet from any other building and from any Street and not having therein any stove flue fireplace hot air pipe hot water pipe or other apparatus for warming or ventilating the same provided that no portion of the building extends beyond the general line of buildings in any Street."

Sub-sections 11 and 12 repeat the exemptions contained in the clauses in Section 6 of the 1855 Act, in regard respectively to buildings not more than 30 ft. high and 125,000 cubic feet extent and standing 8 ft. from a street and 30 ft. from nearest buildings, &c., and to buildings not more than 250,000 cubic feet extent (216,000 in the 1855 Act) standing 30 ft. from a street and 60 ft. from adjoining buildings. But to each of these is added a clause to the effect that a detached dwelling-house is not to be excluded from exemption because it is within 30 ft. or 60 ft. (as the case may be) from a stable building used in connexion with it.

Party-fence walls are after all to be exempted (Sub-section 13) when not more than 7 ft. high from the top of the footings. A new clause exempts entirely greenhouses "when not attached to other buildings" (the qualified exemption when "attached" remaining as at present).

The growing taste for window-conservatories is recognised under Sub-section 16, which permits cases of metal and glass solely for holding plants, fastened to the woodwork of the sill "and lower sash" of a window, not projecting over the public way and not projecting more than 12 in. from the external wall. Why fastened to the "lower sash"? Is it pre-supposed that the lower sash is to be fixed open in this case? It is not easy to understand what is the practical meaning of this provision.

The second clause of Sub-section 17 (the first is an old clause) provides that if any addition is made to the buildings specified in Sub-sections 10, 11, and 12, altering the height, area, or extent of such building, the Council may give notice to the owner or occupier either to remove such addition or to make the building conformable with the provisions of the Act (as if not exempted) within fourteen days, failing which, the Council may remove it and recover the expenses.

Section 203 exempts buildings for the supply of electricity from the general provisions of Parts V., VI., and VII. (this is really provided for under Section 75, so that the clause is superfluous), but requires plans to be submitted to the Council for their approval.

Section 205 provides that, in addition to the exemption of Gas Companies, nothing in the Act prejudices any of the powers or privileges conferred upon a Gas Company by Act of Parliament "as existing immediately before the passing of this Act."

By Section 206 any building exempted is only to be so as long as it is used for the purposes for which it was exempted.

Section 208 (which is entirely out of its place) makes the provision, the omission of which we noticed in a former part of the Act, that a party-wall not in conformity with this Act when taken down or destroyed to half its extent becomes a new party-wall, and must be entirely rebuilt. This ought to have gone among the provisions in regard to party-walls, or in regard to new buildings. In fact, some of the clauses in the latter part of the Act seem to be merely the supply of omissions and oversights in earlier portions of the Act, crammed in at the last moment. This also is not a business-like way of drafting an Act.

Sections 210 and 212 refer to the case of buildings erected before the commencement of the Act, or in progress at its commencement. The first provides that buildings erected before the commencement of the Act and in conformity with the then existing law shall be deemed to be in conformity with the new Act, "subject to the provisions of this Act as to new buildings or the alteration of buildings"; and 212 provides that any building structure or work which has been commenced before and is in progress at the time of the commencement of this Act, may be completed in accordance with the provisions of the Acts in force immediately before the commencement of this Act. The same privilege is allowed in the case of buildings contracted for before the "passing" of the Act (*i.e.*, before August 25 of this year). This provision, as we have already observed, ought to have been coupled with the definitions of new buildings, and is apparently an afterthought.

Section 211 (the section of "Rules as to Conversion of Buildings" referred to in the "Penalties" portion of the Act) forbids the conversion of any buildings (unless the Council otherwise allow) in such a way that when converted they will not be in conformity with the provisions of the Act relating to the class of buildings to which they belong.

The specified cases, in respect of which this caution is given, are (1) converting into a dwelling-house any building not constructed for human habitation; (2) converting one dwelling-house into two or more, or (3) converting two or more into one; (4) converting an "exempted" building into a form in which it would not have been exempt if originally built so; (5) re-converting to a dwelling-house any building which has been discontinued from that use; (6) converting into a dwelling-room any part of a room used as a shop; (7) converting a dwelling-house or any part of one into a shop.

The only portion of the Act which remains to be commented on is the Third Schedule, of "Fees Payable to District Surveyors. These are made out in great detail for every possible case, and entirely in schedule form, so that their effect can be immediately apprehended. It is one of the eccentricities of procedure in regard to the form of this Act, that while the framers of it have scheduled the whole of the Surveyors' fees, many of which were not scheduled before but only defined in long sentences, they have taken the opposite course (as before observed) in regard to thicknesses of walls, and gone back from the convenient schedule form to the less convenient form of writing out. The list commences with a new fee of 10s. for any building not exceeding 30 square ft. in area and not more than 10 ft. high. The main fee, for new buildings not exceeding 400 square ft. and not more than two stories high, remains as before, 1*l.* 10s.; and, generally, the proportion of fees seems to come to much the same result as at present, but it is to be observed that the existing qualification in the case of new buildings, "but no fee shall exceed 10*l.*" does not appear in the new schedule. Some general regulations are added as to certain points and certain exceptions in regard to fees. It may be noticed that although a Surveyor is expressly prohibited (in the body of the Act) from charging tenement chambers in one building as separate buildings, he is empowered in the Schedule to raise the fees by one-half more than the specified amounts in the case of buildings divided into tenements.

This concludes our review of the Act, the object of which has been both to offer criticism (in reference to any possible future amendments), and to give a general sketch, free from the necessary repetitions of a legal document, of the extent and manner in which the new Act will modify the conditions of building work within the County of London.*

NOTES.

AN important decision, affecting many heavy claims against the United States Government in regard to duties on imported articles, has just been given by Judge Colt, of the United States Circuit Court at Boston. The decision relates to the case of Mr. Joseph Burtwell, an importer, against Mr. Leverett Salstinstall, formerly collector of the port of Boston. Mr. Burtwell is an importer of iron, and some time ago imported into the United States iron beams, which were used in the construction of the new Court-house at Boston. The goods were invoiced as "manufactures of iron," upon which there was a lower rate of duty than upon iron beams. The collector classified them as "iron beams," and the higher rate of duty was paid by Mr. Burtwell, as the beams were wanted at once. The question at issue was on the interpretation of Sections 3,011 and 2,931 of the Revised Statutes of 1877, regulating the time, manner, and nature of a protest against the payment of duties. Mr. Burtwell filed a written protest with the collector within ten days after payment, but the Government contended, when arguing the case, that the protest should have been made when Mr. Burtwell paid the estimated duty. On this point hinge all the other cases which have been brought against the United States Government to recover duties paid under protest. Judge Colt has now decided that Mr. Burtwell was right. It is stated that the Government will appeal against the decision. This is said to be the first decision ever given on the point in question, and as a test case involves large sums of money in claims now pending in New York and elsewhere. It is estimated that the total amount involved is about 25,000,000 dols. (5,000,000*l.*).

THE restoration of Bremen Cathedral is now practically completed. The chief work was the rebuilding of the two towers, which have been in ruins since the middle of the seventeenth century, and this has now been carried out in accordance with designs by Herr Salzmann, as near the original as the information now extant permitted. The cathedral was commenced in the eleventh century by Archbishop Bezelin, and was to have been a reproduction of Cologne Cathedral, but the plans were subsequently altered by Archbishop Adalbert, who took as model the Cathedral of Beneventum, the result being a blending of the Gothic and Romanesque styles. The towers, 93 mètres high, are of six stories, the uppermost being open; the remainder of the front is richly decorated with sculpture. Between the portals are mosaics, from designs by Professor Schafer. The cost of the works, amounting to 100,000*l.*, was borne by public subscription at Bremen.

THE Report of the City and Guilds of London Institute for 1893-4 comments on the fact that the ratio of increase in the number of successful candidates in the honours classes is falling off. Last year there was an increase of 60 first-class and 47 second-class candidates. This year there is an increase of only 15 in the first class and 65 in the second; and one reason suggested for this falling-off is that there is not sufficient opportunity in the Institute for the higher class of instruction and practice. An examiner suggests that it would be better if honours students were taught in special honours classes; as it is, the candidates for honours can only obtain further teaching by attending the ordinary class for a second session; and the opinion is expressed in the Report that efforts should be made to establish advanced classes, or to enable students to pursue their studies at other institutions where such advanced instruction can be obtained. Among the new features introduced in the present session is the instutition of preparatory classes in electric lighting, and arrangements have been made for holding an examination next year in bookbinding, with the intention of developing the artistic side of the subject. To meet the requirements of foremen and others engaged in the slate-working districts in Wales, a syllabus of instruction in slate-quarrying has been added to the programme, and the first examination will be held in May, 1895. The syllabus on "Manual Training (metal-work)" has been re-written, but the teaching of metal as a branch of manual training in elementary schools is regarded as being still tentative, and some doubts are entertained as to whether instruction in metal-work can be made "disciplinary" in the same way and to the same extent as in the case of wood-work. In regard to the examinations in wood-work, the examiners complain of the inadequate preparation in drawing of many of the candidates, and the large proportion of successful candidates who have obtained only a second-class certificate in this subject is mainly due to the imperfect manner in which their drawing exercises were executed. "Candidates," it is observed, "appear to think that a certain amount of practical skill in wood-working is sufficient to qualify them to give instruction in the subject, without regard to the importance to them, as teachers, of being able to draw with care and precision." In this latter remark we entirely concur.

THE twenty-fifth exhibition of works sent in for the annual competition instituted by the Turners' Company, and held at the Mansion House during the past week, only serves once more to show what we have so often insisted on in regard to technical education—viz., that in such crafts as that of the turner real efficiency is only to be obtained by the careful study of design and technique combined. Many of the exhibits show great proficiency in execution, which is entirely lost because employed—we had almost said, wasted—in the execution of some subject which is quite unworthy of, and ill-adapted to the material in which it is executed. The works on exhibition include turning in stone, wood, ivory, and metal, but by far the greater number are in the two former materials. The first prize in the wood section is awarded to a wooden "centre-flower" for a ceiling, a subject which does not seem to lend itself well to the turners' craft, the subject is poor in design, with geometrical interweaving figures. In the stone section most of the exhibits consist of vases, bowls, and the like, and are executed in beautiful specimens of porphyry, agate, serpentine, and alabaster. The first prize is awarded to a pair of vases executed in Blue-John spar, from Derbyshire, the beautiful colouring of the material considerably helping the design. In the ivory section, which we should have thought would have appealed to a large range of craftsmen, very few exhibits are shown. The competitions themselves seem to be conducted on lines which are hardly fair to the competitors, the awards being made on different subjects. In this respect it seems to us that the only proper method of arriving at a just decision is to set the subject, and judge the results so that all the prizes may be awarded on the same basis. The exhibition shows that there is plenty of room for the circulation of well-judged designs by competent artists, and it is a subject which the Turners' Company might do well to develop by the appointment of additional judges belonging to the artistic side of craftsmanship.

WE lately directed attention (see page 266 *ante*) to the discoveries that have been made in the course of further excavation at the Saxon cemetery on High Down Hill, Sussex. The hill acquired some celebrity in a later age through another burial. It is the place chosen for his interment by John Oliver, the miller. Dying in 1793, he was buried in a tomb he had erected in his lifetime, near his windmill, having left a charge of 20*l.* per annum for keeping up the tomb and a summer-house he had built close by.* The hill-top commands an extensive view over the sea and Sussex Downs. Findon lies in the valley. Not far distant are Castle Goring, and Tarring, where à Beckett is said to have first introduced the fig-tree into England; and Salvington, the birthplace of Selden, whom the parish register mentions thus: "1584, John, the son of John Selden, the minstrel, was baptised the 20th of December. Died 1654, aged 70." Selden was buried in a vault beneath the east end of the Temple Church, London.

THE strength of the fourth exhibition of the Society of Portrait Painters (at the New Gallery) lies in the contents of the first room, and the finest point in that is an old portrait, Mr. Watts's grand painting of "Mrs. Percy Wyndham" (7), which was seen at the Royal Academy a good while ago. Mr. Stuart Wortley has made a brilliant success in realistic portraiture in his painting of "Mrs. William Duncombe" (20), half kneeling, in a charmingly unstudied attitude, on a low chair by a grand piano; she is clad in a sumptuous crimson velvet dress; the whole of the accessories, including the heavy and ugly case of the conventional piano, are most solidly and carefully painted. This is

* The following *errata* should be corrected: Page 235, third column, lines 16, 18, the "6 in." and "12 in." should be transposed; page 254, third column, line 6, "3,000" should be "3,600."

* The mill has long since disappeared. We saw the tomb and summer-house in 1862.

not the highest or most ideal kind of portraiture, but it is a very fine picture of its class. Mr. Collier's "Miss Brenda Pattinson" (41), opposite to this, is a piquant contrast; it is very flatly painted and in low but delicate harmonies of colour; the lady reclines on a sofa in a picturesque Japanese dress. Mr. Hudson's portraits of General and Mrs. Alexander Stewart (17, 23), are rather hard but otherwise very effective; Mr. Alfred Hitchins's "Mrs. Evans" (16), is a fine piece of colour; Mr. Calderon's "Mrs. Fellows" (36), remarkable for the beautiful drawing of the left arm; Professor Herkomer's "Herman Herkomer" (29) a Gothic-looking picture in Gothic ungilt frame, stands out powerfully from the canvas but is almost ostentatiously devoid of grace or charm of colour or anything else. "Mrs. Lebégne" (30) would never be taken for a work of Bastien Lepage without the aid of the catalogue, nor is it calculated to add to the repute which the late artist gained by work of a very different type. In the North Room one of the best things is M. Cormon's very vivacious portrait of "M. Allard" (63). Mr. Shannon's half-length of "Mrs. Creelman" (58) is a brilliant kind of fantasia in tapestry and lace, looking somehow full of movement, a moment of inspiration in effect. Mr. Herman Herkomer seems to have been engaged in producing an imitation Gainsborough in his portrait of "Mrs. Wansbrough" (69). M. Besnard's "Study in Orange and Blue" (71) cannot be passed over, but it is rather crude and harsh in effect. Mr. John Lavery has painted with great delicacy a seated portrait of a French lady (80) with a beautiful and refined head, and Mr. Jacomb-Hood gives a capital example of the straightforward matter-of-fact type of "likeness" (as it used to be called) in his half-length of "Mr. W. L. Christie" (83). Professor Herkomer's large picture of the dancer in the midst of a skirt-dance (130) in the South Room, almost hid in a whirl of drapery, is a bold attempt at a very unpromising subject, but the result is not pleasing, however one may admire the cleverness of it, and the manner in which the one foot seen beneath the whirls of drapery conveys the idea of the strenuous action of the figure.

THE glory of Claridge's Hotel, the contents of which are to be sold by auction next week preparatory to pulling down the premises for the erection of a new hotel, seems to have resided more in its aristocratic position and associations than in actual splendours. To say truth, it was a poor "poky" place to have the repute of being the special resort of royal and distinguished visitors, and those who looked in at the private view this week must have felt a little dis-illusioned. The royal suite on the first floor, which alone contains anything worth looking at, consists principally of a couple of large sitting-rooms, one looking on Brook-street and the other on a back court which has been not unsuccessfully treated with niches and sculpture, and casts of two of Flaxman's medallion bas-reliefs on the wall facing the house, so as to humanise the outlook a little. These rooms contain some good furniture, partly English of Early Victorian type (including, by the way, a massive specimen of the old familiar type of mahogany round table with a ponderous centre column and a tripod foundation), some very good pieces of older furniture of Louis Seize and Louis Quinze and Empire types, an inlaid buhl table, and a considerable number of clocks, candelabra, old Sèvres vases, and other such articles, containing many varieties of fanciful design, but looking rather more attractive in the photographs that are circulated than in reality. The proprietors might have managed something better for the wall-covering of the "royal suite" than the heavy ill-designed paper which covers them, and which must have been put up, of course, long after the time when an abundant choice of really artistic papers could easily have been had. Some of the best attractions in the furniture are perhaps to be found in the large, roomy, and solid-looking wardrobes and chests of drawers to be found in some of the upper rooms.

THE EXTERNAL COLOUR-DECORATION OF BUILDINGS.*

BY T. G. CESARE FORMILLI.

AMONGST the many considerations suggested by the works of the old masters in Art, there is one concerning the external decoration of houses which leads to the enquiries: Why is it that to-day, when the words "old masters" are on the lips of all, when we consult and study them, that we do not take examples from the various methods that they had of externally decorating their edifices with such beautiful effect? and why do not we also unite colouring with architecture? Colour does not disturb form in any way; in fact, when colour is well-conceived, it greatly helps to bring out the full beauty of form. The Assyrian Art, the Egyptian, Greek, Roman, Arabian, Gothic, and, finally, the Art of the fifteenth century, entered into the decoration of innumerable edifices of great importance, some with monochrome colours and some in polychrome; whilst we, with few exceptions, when we want to do something above the ordinary level, generally resort simply to the usual terra-cotta or stone of uniform colour and to very little else.

We must, however, here note that, in spite of the general similarity of the external decorations of the present age, we see in them from time to time a tendency to more closely study the old masters, and we notice a certain revival of old ideas of great artistic value relating to external decorations in colour.

There is much that could be said about the art of uniting colour with architecture in the Greek and Roman periods, but the time is too limited on this occasion to attempt to cover so extensive a field. I will, therefore, limit myself to a few remarks about the methods adopted by the fifteenth-century artists for adding beauty and variety to their edifices. I ought also to say that amongst the many and varied styles of external decoration of the different artistic periods in different countries, that used by the fifteenth-century masters, which lends itself so particularly to our requirements, greatly surpassed every other style of decoration which had, up to that period, been used. What have we, it may be asked, more beautiful in external decoration than the immortal majolica of the Della Robbia, and the graffitos, chiaroscuros and frescoes of Polidoro da Caravaggio, Pellegrino da Bologna, Maturino Fiorentino, Guilio Romano, and Raffaelle? These artists, who possessed such refined taste, covered many and many external walls of houses and palaces, which, for the proportions of the windows, the elegance of the columns, and that of the cornices, have excited immense admiration, and yet those beautiful and various decorations, framed, as it may be said, by the surrounding elements of architecture, have hardly been considered worthy of study, except in very rare cases.

Rome, Florence, Venice, and many other principal and secondary cities of Italy can give innumerable examples of the beautiful art of external decoration, which, in virtue of the material used and the mode in which the work was done, have endured through many centuries, as well as the architectural stonework which encloses them.

However, we must note that in those golden times the term "decorator" conveyed something more elevated and noble than it is frequently understood to mean to-day. In fact, in the past, a Michelangelo, a Raffaelle, a Cellini, were embraced in the title of decorator. Whereas in these days it is rarely that we see a work of industrial art executed by an artist of high reputation; there seems to be a prejudice against such work. Why, then, do we not entirely abolish this prejudice? Why do not artists who have great names, and those who have not, return to those good and wise traditions of the old times? What variety, what elegance of effect might be added to the many houses that are now being constructed with so much good architectural taste if there were introduced in some or all of the blank spaces decorations of majolica, graffito, chiaroscuro or fresco as in the fifteenth century.

Let us, however, now pass on to the principal methods of external decoration most used in that period, beginning with that of majolica.

* A paper read at a meeting of the "Art-workers' Guild," London, on October 5.

Besides being extremely beautiful, the majolica decoration has the advantage of preserving the walls by preventing the penetration of moisture into the interior, and thereby protecting in the same way both the owner's property and the occupier's health. As is generally known, external decoration in majolica is often seen in the Southern climates, whereas in England if used at all it is chiefly for interiors. If we ought to believe in the old Latin saying, *utile dulce*, majolica would hardly be selected for the internal decoration of dwelling-houses in cold climates, for although in a certain sense it must be considered useful, it certainly would tend to discomfort indoors under ordinary circumstances during cold weather.

Externally, however, as already said, it protects the walls from rain, fog, and from dirt; presenting at the same time to the eye a magnificent and varied effect. We may imagine the effect of the front of a house well designed by the architect for the application of majolica, having beautiful friezes, medallions, panels, &c., in this material, and of truly artistic creation in the sober sense in which the old masters intended. A large frieze, as made by Luca, Giovanni, or Andrea Della Robbia, with spaces between the windows, fitted with beautiful symbolical figures, representing, for example, scenes from family life, or fitted with scenes of child life, as Andrea fitted the famous medallions which decorate the space above the arches of the Hospital of the Innocents, in Florence.

What beautiful and sublime external decoration is made by the five figures of Giovanni Della Robbia, in Pistoia, namely, Faith, Hope, Charity, Prudence, and Justice; also by the immortal frieze, called "The Seven Works of Mercy," of which beautiful copies can be seen at South Kensington Museum, and which are good in any case as an inspiration in that class of external decoration. Not less important or beautiful are the medallions of the arms of the King of Anjou, and the months of the year, both by Luca, and also found amongst the many treasures of the same Museum.

It would be too long to enumerate the many examples of decoration in majolica by the Della Robbia's family, who began with Michael, born about 1320, followed by Luca about 1399, by Andrea in 1435, and by Girolamo in 1488. Afterwards one branch of this family became almost French, and finished with Guido Della Robbia, who did not reach the age of touching the clay, but died in 1625 at the age of only five years.

Another system of external decoration not less beautiful and well adapted to resist atmospheric changes is without doubt that of graffito, which was adopted with immense technical and artistic knowledge in the renaissance of Italian Art.

Such decoration, whether it be for its weathering powers in severe climates or for the magnificent artistic and at the same time subdued effect which it produces to the eye, certainly merits being considered as beautiful as decoration in majolica.

On the Continent, and especially in Germany and Italy, the art of graffito is extensively used, but here in England many must regret that graffito decoration has been almost entirely neglected. It is difficult to account for this unless it is due to erroneous impressions that the English climate would injuriously affect the work, or that it may be too expensive for general application.

Regarding the cost, I need only say that it would compare favourably with any decoration, even if it were of the simplest description, in stone or terra-cotta.

As to the durability of graffito, it is, if properly executed, quite capable of resisting heat, frost, and rain, because it presents a very hard surface, and is much less porous than ordinary stones or bricks, whilst it lends itself to being easily washed, which is an advantage in foggy and smoky atmospheres. Of the very few examples of graffito existing in London, that which is at South Kensington, although not executed according to the method of real graffito, affords nevertheless good evidence that decorations of this character do not suffer materially from long exposure to atmospheric changes. If they are a little darker in tone than when they were executed, they still are perfectly distinct, and, without doubt, of a finer tone and more harmonious than when done by the artist. Here I ought to add that the work just mentioned is cut much deeper than graffito as intended by the old masters in this art—masters to whom we ought to feel deeply grateful for having added this treasure to their already invaluable bequests.

Vasari wrote of the graffito of his day, and gave considerable information about it. He referred

to it in words which may be translated as follows:—"Artists have another sort of art, which is called graffito, and serves for ornamenting the fronts of houses and palaces, which may be quickly decorated by such a system, and more surely resists the rain. Its durability is entirely due to the etching on the wall instead of being simply drawn in chiaroscuro or in colours." He then describes the process of preparing and tinting the cement or plaster which is to be laid on the part of the building to be decorated, and which forms the background of the work, and explains how this is afterwards covered with a wash of lime of travertino, through which the lines are etched with an iron point. He further describes how backgrounds are obtained by the entire removal of the surface wash, and shows how strong projecting shadows for grotesque figures or designs of foliage may be produced by adding stronger shades of the same colour to the background.

Referring again to the graffitos at South Kensington they may be described as *low relief in graffito* rather than graffito proper, because the cut into the plaster or cement bed is excessively deep. The depth of the cut made with the iron or steel point by the artist in that particular work is a disadvantage, necessitated by plastering on the final coat instead of merely washing it on. So deep a cut gives a hard appearance to the design, and impedes the water from running off the walls, whilst tending to accumulate dirt. The true Italian graffito is without this inconvenient feature, because the depth of the cut is scarcely perceptible. The cut or score made by the instrument does not generally exceed the thickness of a sheet of drawing paper, or in other words very little more than the thickness of the surface layer with which the bed-work is covered. Extremely beautiful effects can be produced under these conditions, perhaps more beautiful than can be obtained with a soft pencil on a rough paper. The weight of the leaning point of iron is itself sufficient to remove the light surface, and to make the dark background appear without fatigue to the hand.

In some backgrounds colours in monochrome are sometimes added, and these are treated just as you treat fresco, which is very easy after experience has taught the difference between the tint in its wet and dry state. Some of the finest and richest effects are reached by the addition of gilding to some part of the graffito, as ribbons, fruits, arms, &c. The gold, however, must be added when the graffito is perfectly dry.

Naturally there is much in graffito decoration that experience teaches, but it is not very difficult to execute, and it seems to be deserving of more attention in these days of progress, in virtue of its durability as well as of the excellent effects it lends itself to producing. There seems to be a good field open for teaching graffito decoration in the art schools, which have been so largely established in this country.

There are still other modes of decorating the exterior of edifices which were adopted by the fifteenth-century artist—namely, that of chiaroscuro in fresco, and of fresco in colours. The first has, at a distance, all the appearance of graffito, and, although the design is not cut, it has similar colour and effect.

Much was done in this style by Maturino Fiorentino and Polidoro da Caravaggio, both of whom arrived to the highest point in this art of decoration with their immortal work of chiaroscuro in fresco in Via della Maschera d' Oro in Rome. Many other examples could also be mentioned, but as this work is the most important amongst the others, it will suffice as an illustration of this beautiful art. The frieze representing historical scenes is the most important decoration, and in a certain sense it recalls to mind the sequence of pictures which compose the triumph of Cesare, by Mantegna, at Hampton Court.

Speaking of fresco, what is meant is the real Italian fresco, and not tempera or incausto, which is occasionally confused with it. As an external decoration it may be considered to be truly ideal, and it is to be regretted that in England it appears to be absolutely out of fashion.

Outside fresco, when it is done with good and pure earth colours, upon suitable lime mixed with much sand and puzzolana of that sort which the Romans used or the Colosseum, becomes very solid, hard, lasting, and washable, just like compact and durable stone.

It is really to be regretted that to-day the exterior of buildings is so much limited in the matter of decoration to frames, columns, or, in a few words, to architectural mouldings, whereas the old masters of nearly all ages introduced into their edifices all that contributed beauty. Why, it may be asked, render so poor the mother of all Arts—the one which more directly speaks to our souls, which is so impressive, which cheers and covers us?

Illustrations.

SOUTH TRANSEPT, ST. SAVIOUR'S, SOUTHWARK.

THE front of the south transept was repaired in brick in 1735. When taken in hand by Mr. Wallace nearly one hundred years later, enough of the old work still remained to show that the original design had a high-pitched roof, with a gable recessed behind a straight parapet, and that the great window, of which the old arch existed, was in its main divisions similar to that of the present design, although all cusping and tracery had disappeared.

Mr. Wallace's so-called restoration quite ignored all suggestions to be found in the ancient work of the church; and the window, which he partly copied from a circular one in the neighbouring Palace of the Bishop of Winchester, was singularly ill-adapted for stained glass. The offer of this by a munificent donor to the church led to the new work which is now going on under the direction of Sir A. Blomfield, A.R.A.

MEMORIAL STALLS, ST. SAVIOUR'S, SOUTHWARK.

WHEN the present Bishop of Winchester was translated from Rochester to the see over which he now presides, a committee was formed to raise a fund for providing some memorial of his episcopate in the church of St. Saviour, Southwark, the re-edification of which he had so much at heart. After various proposals it was finally determined that the memorial should take the form of canopied stalls, three on each side, for which there is just room against the piers of the eastern tower arch.

Whether the church is ever raised to the dignity of a cathedral or not, it must always be (like those of Manchester and St. Albans) also a parish church, and one that may be expected to have crowded congregations. It was therefore felt that the choir must be kept as open as possible. For this reason there will be no return stalls, and those eastward of the memorial will be uncanopied.

The contractors for the whole of the works at St. Saviour's are Messrs. T. Rider & Sons, but the memorial stalls being of somewhat special and elaborate character, they have entrusted their execution to Mr. Thompson, of Peterborough.

GRAFFITO DECORATION OF A HOUSE AT LISBON.

ONE of the principal ideas of the artist in the conception of this design of decoration in Graffito was that of keeping—or, better still, helping to develop—the architectural idea which the architect had in his mind in the construction of the building. Such an idea is, without doubt, the chief one which an artist must bear in mind in cases of external decoration.

The basement has been imagined simple, solid, and severe, leaving all the richness of decoration for the first floor, where between the windows are symbolised, by female figures, the principal arts, industries, and sciences. In the medallions above each window, supported by boys, are represented the great masters in these pursuits.

On the second floor the design goes back to a certain extent to greater simplicity of treatment, being confined here to mere decorative motives. Some monochrome colours are introduced to further harmonise the tone of the building with the surrounding landscape.

T. G. C. F.

TECHNICAL SCHOOL AND LIBRARY, WIDNES.

THE site chosen for this building is a most favourable one, being level, well drained, and abutting on to the main road, and having elevations to three good streets.

The design was selected in open competition, on the advice of Mr. Henry Hartley, F.R.I.B.A., of Liverpool, the assessor called in by the Committee.

The building is divided into two sections, a public free library in the one, and a science, art, and technical school in the other. The following accommodation is provided:—

The public library is central, having perfect supervision of the adjacent rooms, also in itself having ample storage room for books and papers; due provision is made for future extensions, and ready access to every room. The news-room has been given a prominent position, and will be a one story building with open timbered roof, thus obtaining ample light and air space without detracting from the appearance of the façade to Victoria-road, which is the principal street in Widnes.

The boys' room, being planned next to the librarian's room, is under his personal supervision, as well as under that of the assistant in the lending department. The lending library is lighted by both top and side-lights. A book-store will be arranged in gallery form, with a storeroom for old periodicals and newspapers.

In the technical and art schools every teaching-room throughout is lighted from left hand side and back; the different classes are grouped into departments, the chemical department and handicraft class-room isolated from the rest of the school.

The building will have two main entrances from the ground floor, with vestibules to each, both facing Victoria-road, one for the public library, the other for the technical schools; the latter has a keeper's house and committee-room adjacent. A separate side entrance and exit will also appear on the west elevation for readiness of access and despatch to the frequenters of the lending library. The chemical laboratory will stand on the back of the site, and furthest away from Victoria-road. The laboratory will be entered through double doors, will have open timbered roofs, and will be spacious and lofty. It will be fitted with five workable tables (double), to accommodate forty students. The fittings generally will be of pitch-pine, with teak tops to the tables. In conjunction with the laboratory are provided a balance-room, store and re-agent-room, and bottle-rooms, together with the lecture-room for demonstrations, &c., fitted with raised gallery, demonstrators' table, &c.

The whole of the warming and ventilating will be carried out by the Sturtevant Engineering Company, London, whose system was finally adopted by the committee after an exhaustive examination of many other mechanical systems at present in use. By this arrangement the whole of the building, or any portion as desired, can always be flooded with pure warm air in the winter, and pure cold air in the summer; the same system of ventilating and heating will apply to corridors, staircases, and entrances; the system is arranged to completely change the whole of the air in the building three or more times within the hour, and maintain an even temperature throughout of 60 to 65 degrees.

With regard to the material used, all exposed internal joinery will be executed in pitch-pine stained and varnished; corridors, passages, and reading-rooms of pitch-pine blocks; while the entrance hall will be paved with ceramic mosaic of simple design.

The elevations are designed to be faced with machine-made Ruabon bricks, with all the dressings in red terra-cotta, which are being supplied by Mr. Henry Dennis, Ruabon; the enriched parts and ornament generally being specially modelled from cartoons approved by the architects.

The erection of the whole of the work has been entrusted to the hands of Mr. Isaac Dilworth, contractor, of Wavertree, Liverpool, from the designs and under the supervision of Messrs. Woodhouse & Willoughby, of Manchester.

It is estimated that the structure will take about eighteen months to erect, at the total cost of about 12,000*l.*, including equipment.

COMPETITIONS.

ADAM SMITH MEMORIAL, KIRKCALDY.—A special meeting of the Kirkcaldy Town Council was held on the 15th inst., for the purpose of selecting competitive plans for the Adam Smith and Beveridge Halls and Library. Provost Stocks presided. No. 7 plan (Messrs. Dunn & Findlay's, Edinburgh) was awarded first premium of 50*l.*; Messrs. Campbell Douglas, & Morrison Glasgow, second, 30*l.*; and Mr. Simpson, Stirling, third, 20*l.*

"A NOTE IN GERMANY."—We have had to defer the article so entitled in consequence of the space taken up in this issue by other matter.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring Gardens, Sir John Hutton, Chairman, presiding.

Highgate Archway Improvement.—The Highways Committee brought up the following report in reference to the Highgate Archway:—

"By Section 4 of the London County Council (Improvements) Act, 1894, the Council is authorised to widen and improve Archway-road (one of the main roads vested in the Council by the Local Government Act), and to alter and reconstruct the archway which carries Hornsey-lane over the road. The cost of the work, which is to be carried out by the Council, is estimated at 27,000*l.*; and of this the Ecclesiastical Commissioners are to pay 1,000*l.*, and the remainder is to be paid in equal shares by the Council, the Middlesex County Council, the Vestry of Islington, and the Hornsey Local Board, but the contribution of each of the three latter is not to exceed the sum of 6,500*l.* After the completion of the reconstruction, the archway is to be maintained and repaired as a county bridge, at the joint expense in equal shares of the two Councils. Under our reference as to main roads, we initiated this improvement and arranged the terms with the various authorities concerned, and it was on our recommendation that the Council obtained the necessary powers. We are, however, of opinion that the carrying out of the work falls within the province of the Improvements Committee, and we accordingly recommend—

'That it be referred to the Improvements Committee to carry out the Highgate Archway Improvement authorised by the London County Council (Improvements) Act, 1894.'"

The recommendation was agreed to.

Water-supply for Urinals.—The report of the Parks Committee contained the following paragraph, the recommendation being agreed to:—

"We have received a notice from the New River Company requiring the provision of a waste-preventing apparatus in place of the automatic tank at the urinal in Waterlow Park, and the provision of similar apparatus to each of the eleven water-closets at Lauderdale House, together with cisterns not capable of discharging more than two gallons of water at each flush, instead of three gallons as now. To carry out the works comprised in this notice will cause an expenditure of 15*l.* 10s. upon a building but recently completed. But apart from this, we are of opinion that a flush of not more than two gallons of water is distinctly insufficient, and that the adoption of such a small flush will seriously interfere with the efficiency of the sanitary arrangements. We recommend—

'That the Council do inform the New River Company that it is of opinion that a flush of water not exceeding two gallons, as required by the company, is insufficient for the conveniences at Waterlow Park.'"

Tumulus, Parliament-hill.—The following paragraph also occurred in the same Committee's report:—

"The Council is aware that the Committee has for some time past had in contemplation the question of opening the tumulus on Parliament-hill. Of what this mound may consist or what it may contain have long been subjects of speculation amongst learned societies and specialists, and representations have been made with a view to the tumulus being opened in the interests of antiquarian and scientific research. We think that the opening of the tumulus would set at rest these speculations, and at any rate would indicate beyond doubt the original purpose of the mound. Mr. C. H. Read, of the British Museum, has kindly offered to gratuitously superintend the work. He has recently been engaged in directing the opening-up of an ancient Anglo-Saxon cemetery in South Sussex, and we consider it most desirable that the offer of Mr. Read should be accepted by the Council. We recommend—

'That the Council do approve of the opening of the tumulus on Parliament-hill under the superintendence of Mr. C. H. Read, of the British Museum, and that for this purpose we be authorised to expend a sum not exceeding 25*l.*'"

The recommendation was agreed to.

Sewer Ventilation.—Lieut.-Col. Ford moved "that it be referred to the Public Health and Housing Committee to consider and report whether in certain cases the open gratings to the sewers in the public highways constitute such a danger to the public health as to render it desirable that the Council should consider the question of whether a remedy can be provided."

Mr. Burns, M.P., said that the more the sewers were ventilated the better for the health of the people. Where people complained of smells coming from the gratings, it was sometimes suggested that they should allow ventilating shafts in their back gardens or against their houses, but they usually were too short-sighted to permit such erections. It would be a good thing if the parsons would allow shafts to be placed up the steeples of their churches.

Mr. McDougall explained that the Main Drainage Committee had the subject under consideration. When they learnt from experts that sewer-gas was free from germs they were very much astonished. However, they had referred it to the experts to say whether sewer-gas was not injurious to health in some way other than through the presence of bacilli.

With the substitution of "Main Drainage Committee" for "Public Health and Housing Committee" the resolution was carried.

The Council adjourned soon after six o'clock.

ARCHITECTURAL SOCIETIES.

Glasgow Institute of Architects.—The annual meeting of the Glasgow Institute of Architects took place on the 16th inst. in the Religious Institution Rooms—Mr. W. Salmon presiding. The annual report stated that three new members had been admitted during the year. The number of ordinary members was now fifty-two, and of honorary members five. The conditions of competition, it was mentioned, for the Govan Congregational Church, Public Hall and Free Library for Kirkcaldy, and Paisley Grammar School and Academy were under consideration by the Council. The Royal Institute had agreed to place the Glasgow Institute on the same footing, as regarded its Council, as that held by the Royal Institute of Ireland. The Standing Committee on Public Architecture have had under consideration the designing of the public buildings of the city, and on their initiative the Council of the Institute are in correspondence with the Lord Provost on the subject. The Council had also asked the Police Commissioners to exhibit the plans of the bridges proposed to be erected over the Clyde. The Chairman said it must be to the public advantage that architects of the greatest experience should be appointed to design and superintend their public buildings. The employment of independent architects would not cost a penny more than the present system. If this course were pursued, all their public buildings might be more worthy of their city, in whose welfare and advancement they were all interested. Why should not every building erected with the citizens' money possess those qualities of fitness and beauty which would command for them the praise of future generations? The report and accounts were approved of, and the members of the Council were afterwards elected.—The first meeting of the newly-elected Council was held in the chambers of Messrs. MacLean, Fyfe & Maclean, writers, St. Vincent-street, on the 23rd inst., when the office-bearers for the ensuing year were elected as follows:—President, T. L. Watson; vice-president, J. J. Burnet; auditor, David Thomson; hon. treasurer, Alex. Petrie; secretary, C. J. Maclean, writer; members of Council, T. L. Watson, Alex. Petrie, Henry E. Clifford, John Keppie, John B. Wilson, J. M. Monro, A. G. Thomson, John Thomson, John James Burnet, J. A. Morris (Ayr), and George Bell. The committee for the year were also appointed. The attention of the Council was called to the restoration of Glasgow Cathedral at present being carried out, and Mr. J. Honeyman, A.R.S.A., made a statement on the subject. A committee was appointed to examine the Cathedral, and take such action as they thought neceessary.

Books.

A Text-Book on Roads and Pavements. By Fred. P. Spalding, Assistant Professor of Civil Engineering in Cornell University, Member American Society of Civil Engineers. New York: John Wiley & Sons. 1894.

"The aim of this book," so the author states in his preface, "is to give a brief discussion, from an engineering standpoint, of the principles involved in highway work." Much space is occupied with considerations as to the location of new roads, and as to changing the location of existing roads. This is to be expected in a work dealing with a new country, where new centres of industry are constantly springing up, necessitating increased means of communication. Both as regards the construction of new roads, and the maintenance of old ones, the paramount necessity for thorough drainage is again and again emphasised. Reiteration appears to be somewhat of a weak point with the author, but in the present instance the end must justify the means.

The methods of construction and the advantages and disadvantages of the various forms of road surface are discussed in a rather tentative style.

In reference to the construction of macadam roads, it is stated that "Where no roller is used, the stone is usually spread on the surface of the road-bed to the full thickness desired for the road, and left to the action of the traffic." Surely such a practice cannot be defended, either as being economical or convenient. With regard to uniformity in the size of road-metalling—a most important point in road-construction and maintenance—the following remarks are worth quoting: "The best practice seems to favour the exclusion of the fine material from the stone, without insisting on too great uniformity in size (stones being allowed, probably, from ¾ in. to 1½ in. or 2 in. in dimensions), and then adding small material after the placing of the stone upon the road to assist binding."

Under "Binding Material" the author says: "The voids in loose broken stone comprise about 40 to 50 per cent. of the volume. In the stone when compacted in the road the voids are somewhat reduced, probably ranging from 30 to 40 per cent. of the volume."

All stone, not ideally perfect, contains a variable quantity of binding material, which quantity is increased during the process of consolidation. An experiment such as is described in the text would, therefore, give little clue to the proportion of binding material to be added, which would certainly never approach to 30 or 40 per cent.

According to Mr. T. Codrington, M.Inst.C.E.:—"Assuming, as experiments show, that broken road materials contain 55 per cent. of solid stone, a cube foot composed of broken stone, which weighs in the solid 172 lbs. per cube foot, will weigh 172 × 0·55, or 94½ lbs. By the process of consolidation in the road, it is crushed and compressed together till it weighs, as in the roads above referred to, say 162 lbs. per cube foot, and the bulk it then occupies must be in the inverse proportion, *i.e.*, $\frac{94\frac{1}{2}}{162} = 0{\cdot}583$, or 58 per cent. of its bulk before it was spread on the road. Or, put in another form: it takes nearly 1¾ of road-metalling, measured by bulk or thickness, to make 1 of consolidated road surface." The voids in consolidated broken stone are, therefore, reduced to about 5½ per cent., and this exactly coincides with steam-roller experience.

During his consideration of the various systems of road management the author makes some very practical remarks, which, although specially referring to America, are worthy of consideration by English County Councils before deciding to undertake the direct management of their roads.

The character of this little book is not unlike that of Captain Roland as described by his brother in "The Caxtons,"—"Roland beats about the bush till he sends out the very bird that we went to search for. He is never in the wrong without suggesting to us what is the right."

The "Practical Engineer" Pocket-book and Diary for 1895. Edited by W. H. Fowler, M.I.M.E. Technical Publishing Co., Limited, Manchester.

This little pocket-book contains all the tables and general information that a mechanical engineer is likely to require, besides a large number of diagrams, many of which are really working drawings.

Although pocket-books are only generally used for reference, yet anyone who would take the trouble to carefully read them through, with the purpose of committing to memory the more important formulæ and data, would be surprised to find what a large amount of knowledge he had acquired by so little trouble.

Such books do not, of course, treat any subject exhaustively, but they give the results, expressed in formulæ or otherwise, of those who have done so, and may therefore be regarded, more or less, as a royal road to knowledge. Information obtained in this way is, of course, only superficial, and it is most desirable to verify the results for oneself as far as possible, but in every-day practice it often proves of the greatest importance to have the data such as these pocket-books contain at your finger-ends, although one may not be able to deduce, step by step, the many formulæ given throughout their pages.

Roof Carpentry. By George Collings. London: Crosby Lockwood & Son.

This is a very elementary work, and by no means deals, as the preface would seem to imply, with "the framing of wood roofs of almost every

description." For a book intended for very young students, there are too many examples of construction that are bad in principle, but which the author thinks that practice justifies. Indeed, with the usual bias of a *soi-disant* "practical man," he exalts practice over theory, heedless that practice and theory are always at one, when the practice is correct and the theory complete. In some points the book is good and up-to-date; thus the account of scarfing is in consonance with modern needs and modern capabilities. The most useful part of the book to a young carpenter is the chapter on hip-roofs, in which the method of finding bevels and cuts is clearly and correctly described.

The Practical Plasterer. By Wilfred Kemp. London: Crosby Lockwood & Son.

A model of what a book on technical subjects ought to be, in which, as far as the space allows, not only the rudiments of the plasterers' craft are explained, but the higher branches, as modelling, casting, stucco-duro, gesso, and sgraffito, are clearly and adequately described. In short, it is a book that should be in the hands of every plasterer, and would be of high value to every architectural student.

Theoretical Mechanics. Solids. By J. Edward Taylor, M.A., B.Sc. London. London: Longmans, Green & Co.

Numerous as books on mechanics have now become, there is yet room for one which treats the theoretical part of the subject as clearly as does the present. Advanced mathematics are excluded, and a knowledge of the elements of algebra and geometry is sufficient to enable a student to follow the reasoning and calculations, and as the work is intended to serve as a text-book for the Science and Art Department's examinations, as well as for London University matriculation, and can be recommended as amply sufficient for both, it is clear that, within its prescribed limits, the subjects are adequately dealt with in this book.

Mensuration Made Easy; or, The Decimal System for the Million. By Charles Hoare. London: Effingham Wilson & Co.

A commendable attempt to provide instruction with practical illustrations for those whose education has been neglected in the direction of decimal fractions and mensuration; but in the twentieth edition there are unexpected instances of careless editing—as, for example, in the rule for the cubic contents of a sphere, the multiplier is given as ·5236, and in the example worked out the more accurate figures ·523577 are given without explanation. In the figuring of this example there is a misprint of 1 for 3, which might puzzle the class of student for whom the *brochure* is supposed to be intended. Again, the multiplier for cubic yards is given on one page as ·03703, and on another as ·03704.

A Key to Carroll's Geometry. London: Burns & Oates, Limited.

"Carroll's Geometry" is so well known and so widely used that a key to the more advanced parts, orthographic projection and solid geometry, will be of value to those students who are studying without a tutor. At the same time, the assistance given is ingeniously arranged to prevent the encouragement of idleness by removing all necessity for the student's own application and thought.

Hood on Warming Buildings by Hot Water. Re-written by Frederick Dye. London: E. & F. N. Spon.

A work of so great authority as "Hood on Warming" needed but to be brought up to date to maintain its high position. This has been most ably done by Mr. Dye, with the result that we have now as good a guide to the practice of hot-water heating, at least by the low-pressure system, as can be desired. The main points of the high-pressure system and warming by heated air are explained, though not so fully as those of the low-pressure method. Valuable information is given also on the various classes of apparatus for the supply of hot water for domestic and other purposes, being in fact the series of papers contributed by the author to the *Builder*, and reprinted by permission. A short chapter on ventilation serves to point out some of the rudimentary principles, but the space allotted is insufficient to allow of the subject being fully treated.

Heating by Hot Water. By Walter Jones. London: Crosby Lockwood & Son.

Although a "trade" book, and although Messrs. Jones & Attwood's work is chiefly on the low-pressure system, we have here very useful information on the fundamental data which are necessary in determining the efficiency of hot-water apparatus. The points of difference and the relative merits and demerits of the rival systems of high and low pressure are fairly dealt with, as are also, allowing somewhat for trade bias, the advantages and defects of different types of boiler. Amongst the most valuable portions of the book are the precautions to be observed in order to ensure safe and efficient working of various apparatus.

Correspondence.

To the Editor of The Builder.

VENTILATION.

Sir,—The thanks of all who are engaged in solving the problem of continuously reliable ventilation on a scientific basis are due to the *Builder* for the timely exposure of the means employed by a certain trading firm, which, in addition to distributing broadcast the anonymous pamphlet referred to (page 273 ante), appears to have secured influence over some periodicals professing to record scientific or official views, to such an extent that the editors persistently decline to give place in their pages to facts which refute the misleading statements they publish.

If these pamphlets and articles were seen only by architects and the public who take the trouble to examine what is actually accomplished by "mechanical ventilation" properly applied, little harm would result, but being artfully compiled with the express purpose of deceiving the unthinking, it is hoped to bolster up a trading concern which is evidently alarmed at the truth becoming known that the "plenum principle" rightly applied is a decided success, and is becoming rapidly adopted for every class of building.

The personal attack upon my doings in connexion with the New General Hospital, Birmingham, is beneath contempt, and only calls for remark because, if others are misled thereby, the public health may suffer, and money will be wasted upon appliances which principally benefit those who, by discreditable means, induce the ignorant to employ their wares.

William Henman, A.R.I.B.A.

*** The arrangement by which people of a certain class get puffed in papers of a certain class, to which Mr. Henman alludes, is simply an exchange of "puffs" for advertisements; *i.e.*, an advertisement is given to the paper on an understanding that articles in favour of the advertiser's goods are to be inserted on convenient occasions. We know all about it, because it has been occasionally tried on us—with what success those who have made the attempt best know. This sort of thing is contemptible enough in any case, but when it comes to subjects so important as the sanitation of hospitals, &c. (a matter, one may say, of life and death), it is simply disgraceful. We only wish that we could publicly expose by name the firms and the papers carrying on this kind of conspiracy to gull the public; but the law of libel is such that those who would be glad to protect the public from imposition are prevented from doing so. We have received one or two other very strong letters on the subject, in addition to Mr. Henman's. —Ed.

BRICKS.

Sir,—It is very easy to be wise after an event; so probably thought the big men in the brick trade whom a few years back formed a ring to raise prices and restrict production, with the result that bricks have ever since come from the Midlands. I am not interested in the brick business, but very much in bricks, and from my experience I should prefer the old stock if well burnt, as the best material to resist both fire and the eroding effects of other elements.

To get a good red brick is still difficult; the bright reds made mainly from the Thanet or Bagshot sands are attractive but not durable; those brought from distant parts are pressed smooth, and in colour not quite satisfactory—a good cherry red combined with durability, as yet the Mecca of brick manufacture.

I have recently made diligent search, but, although I could not find a red to my mind, I found a primrose-coloured brick of great promise manufactured by the Gray's Chalk Quarries Company. These if laid with a neat, closely-cut joint, would make a very good quoin and dressing to openings, much resembling the Ruabon bricks used for such purposes in Wales, and, as a wall facing, would look very pretty. Others of a somewhat similar colour there are with a vitreous surface, and some made from pulverised flint.

I merely make these notes for the information of the profession. T. E. Knightley.

WATER LODGING ON MEETING-RAILS.

Sir,—May I make a suggestion to manufacturers of window-sashes? In certain states of the atmosphere in a room a quantity of moisture forms on the glass and settles as water on the lower rail of the upper sash, which it thus helps to decay. I suggest that this rail should be sloped, and that the top of the upper rail of the lower sash should also be sloped to meet it, so that a kind of channel would be formed by the two. The water would run off between the two rails as soon as the window was opened. Where there are cross-bars, and at the lower bar of the lower sash, I think that with the same object it would be an improvement if all grooving and other ornamentation were dispensed with, the parts being sloped with a plain surface. T.

THE ACTION OF LIME ON LEAD.

Sir,—In looking through some of your back numbers the other day I caught sight of the statement that lime acts injuriously on lead. It struck me that if this is the case many an old soil-pipe built iuto the wall with lime mortar must be in a bad condition. Can any of your readers relate their experience? In removing old lead soil-pipes thus built in, have they noticed them eaten away?

X. Y.

COLOURING PLANS ON DEEDS.

Sir,—In reply to E. H. After inking in the plans on the parchment mix some powdered alum with a drop of water and apply it with a brush to the parts to be coloured. When this has dried any superfluous alum can be lightly brushed off, and the colour will flow and lie on as evenly as on paper.

G. W. Leighton.

The Student's Column.

DETAILS OF RURAL WATER SUPPLY.—XVII.

PIPES.

Water is conveyed in the various stages from the source to the consumer by means of open channels, tunnels, and culverts, or by pipes of cast or wrought-iron, steel, lead, clay, and wood. Where the water is conveyed under pressure, pipes must be used, and they are generally more convenient and economical in construction. The thickness of the shell of the pipe, and the form of joint, depend upon the material employed, the capacity, and the pressure it will be required to withstand. In calculating the thickness of the shell, sufficient allowance must be made for imperfect workmanship, shocks in handling and laying in the trenches, also the weight of the superincumbent earth, and traffic they will have to support, as well as the great strain which may come upon them on account of the sudden opening or closing of valves.

The bursting strength of pipes is found by the following formulæ:—

(1) $p = s \times \text{hyp. log. R.}$ (2) $s = \dfrac{p}{\text{hyp. log. R.}}$

(3) $\text{Hyp. log. R} = \dfrac{p}{s}$.

Where

p = the internal pressure in tons per square inch.
s = the maximum tensile stress in tons per square inch—7 tons being usually adopted as the value for cast iron.
R = the ratio of the outside diameter to the inside diameter.

A high factor of safety must be used to adequately allow for the strains imposed on the metal. Empirical formulæ based on practice are found to be more convenient for the purpose of determining the thickness of metal. These formulæ are numerous and widely divergent in their results, but the following, suggested by the late Mr. J. La Trobe Bateman, has been found to work well in practice:—

$$t = \cdot 25 + \frac{Hd}{9600} \text{ where}$$

t = the thickness of the pipe in inches.
H = the head of pressure in feet of water.
d = the inside diameter of the pipe in inches.

The following table has been calculated from

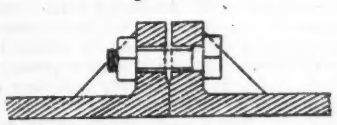
this formula for a head of 300 ft. of water-pressure :—

Internal diameter.	Length, not including socket.	Thickness.		Weight, including socket.	Bursting pressure per square inch.	Factor of safety for 300 ft. = 130 lbs. per square inch.	Weight of Lead joints.
		Inches and decimals.	Nearest thickness in 16ths of an inch.				
in.	ft.			cwts.	lbs.		lbs.
2	6	·31	5/16	·418	4,900	38	1·4
2½	6	·33	5/16	·625	3,920	30	1·6
3	9	·35	3/8	1·06	3,920	30	2·3
4	9	·375	3/8	1·38	2,940	23	4·0
5	9	·41	7/16	2·01	2,744	21	5·0
6	9	·45	7/16	2·38	2,290	18	6·5
7	9	·47	1/2	3·17	2,240	17	7·7
8	9	·50	1/2	3·59	1,960	15	8·2
9	9	·53	9/16	4·55	1,960	15	10·4
10	9	·56	9/16	5·03	1,764	14	11·5
11	9	·59	9/16	5·51	1,604	12	13·5
12	9	·62	5/8	6·69	1,633	13	18·0

As absolute correctness cannot for practical reasons be attained, it is usual to allow a deviation of 3 per cent. in the calculated weights.

Cast-iron pipes are connected by means of flange-joints bolted together, by spigot and socket joints run solid with lead, &c., or the spigot is turned and the socket bored out to receive it. The flange-joint (fig. 43) is stronger

Fig 43



than either of the latter, but is more costly, and is rarely used when the pipes are laid horizontally in trenches except for high pressures. It is chiefly used where the pipes are fixed vertically for stand-pipes, &c. The faces are machined and jointed together with red-lead or with packing-rings made of lead, rubber, or other material.

The proportions of cast-iron flanged-pipes are given in the following table :—

Diameter of pipes.	Diameter of flange.	Centre to centre of holes.	Thickness of flange.	No. of bolts in flange.	Diameter of bolts.
In.	In.	In.	In.	In.	In.
2	6	4¾	¾	4	⅝
2½	6½	5⅛	¾	4	9/16
3	7	5½	13/16	4	9/16
4	8½	6¾	⅞	4	9/16
5	9½	8	⅞	6	⅝
6	11	9¼	⅞	6	⅝
7	12½	10½	1	6	⅝
8	13⅝	11¾	1	6	¾
9	15	12⅞	1	8	¾
10	16	13¾	1 1/16	8	¾
11	17½	15	1⅛	8	¾
12	18½	16	1⅛	10	¾

Spigot and socket joints with lead, rust rubber, or turned and bored joints take several forms.

Fig 44

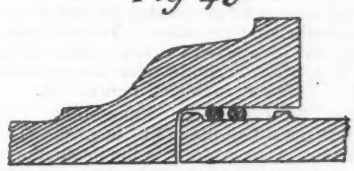
Fig. 44 is the joint adopted in the Tansa new works for supplying Bombay. Fig. 45*a*, 45*b* are

Fig 45 (a)

Fig 45 (b)

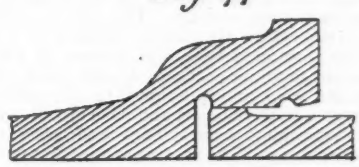
frequently used, the former having the advantage of preventing blown joints, owing to the resistance offered by the bead on the spigot and the recess in the socket. The socket space for jointing should not exceed ¼ in. in thickness in pipes up to 3 in. diameter, 5/16 in. from 3 to 8 in. diameter, and ⅜ in. from 8 to 12 in. diameter. Rust joints are rarely adopted for waterworks, and when used under special circumstances they do not differ from the forms shown for lead. They are made by forcing a mixture of iron borings or turnings and sal-ammoniac into the space between the socket and spigot. Rubber joints (fig. 46), known

Fig 46



as Forster's patent, are largely used for temporary purposes in the North of England. Two beads are cast on the spigot end between which one or more circular rubber rings are placed and then driven into the socket. Turned and bored joints (fig. 47) have been extensively used in the North

Fig 47



of England and abroad, but only in a few instances in the South of England. Pipes jointed thus must be laid in straight lines, with expansion joints or ordinary spigot and socket lead joints every tenth pipe to allow for the variations in temperature. The half turned and bored is generally used, so that lead may be inserted if deemed necessary. The taper of the machined portion should not be less than 1 in 32, and the width should not exceed 1 in. An increased width causes greater rigidity, rendering the work more liable to fracture by the traffic and superincumbent earth. Cast-iron pipes should be made from the grey variety, of good tough quality, which should be re-melted in a cupola before running. The increase in strength and density caused by re-melting is strikingly illustrated by the results obtained by Sir Frederick Bramwell with Acadian cold blast iron, as follows :—

SAMPLES.	TENSILE STRENGTH PER SQ. IN.
1st Samples.....	7·5 tons.
2nd ,, after 2 hrs. longer fusion	8·3 ,,
3rd ,, after 1¾ hrs. longer fusion	10·8 ,,
4th ,, re-melted with fresh pigs	11·0 ,,
5th ,, after 4 hrs. longer fusion	18·5 ,,
Maximum of 5th samples	19·6 ,,

the tensile strength being increased 150 per cent. by eight hours of continued fusion. A clause should be inserted in a specification for cast-iron pipes providing that a test-bar cast from time to time shall, when placed edgeways on bearings 36 in. apart, support a certain weight.

Test-bars 1 in. × 2 in. in section and 3 ft. 6 in. long should be capable of supporting a weight of 30 cwts. gradually applied at the middle of the bar.

Pipes should be cast socket downwards in dry sand-moulds, and run, as quickly and equally as possible, in one operation, so as to avoid a "cold shot." Pipes 4 in. and upwards in diameter should be cast vertically; under 4 in. at an angle of 45 deg. The strength at the spigot-end is increased by casting a head or additional 6 in. or more beyond the finished length of the pipe, which is afterwards cut off in the lathe. The head has the effect of compressing the metal, and permits the ash and bubbles to rise into and be removed with it. The pipes should be straight, cylindrical, and free from chaplets, core nails, and other imperfections, and the metal should be of uniform thickness throughout. The consecutive number, year, and maker's name should be cast on each pipe, the numbers on rejected pipes being disfigured by a chisel-cut, and no number of a rejected pipe must be replaced.

THE INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.—The following gentlemen, having satisfied the examiners at the examination held in Birmingham on October 5 and 6, have been granted the Association's certificate :—James G. D. Armstrong, Henry G. Bradshaw, Amos Burton, junr., William S. Green, Edward W. Hickes, Albert H. Hughes, Edward B. Newton, James Openshaw, William A. Palliser, Joseph Perkins, William Slater, Frederick Thackeray, and Frank Worrall. The next examination will be held in London on April 5 and 6, 1895.

OBITUARY.

MR. H. TAYLOR.—Mr. Henry Taylor, master builder, Pontefract, died very suddenly on the 15th inst.

MR. E. CLARK.—Mr. Edwin Clark, M.Inst.C.E., who died at his residence, Cromwell House, Marlow, on Monday night, was born in Marlow in 1814. According to the *Daily News*, he acquired a taste for mathematics and engineering, and at the time of the railway mania gave up a mathematical mastership he held to enter the engineering profession. He attracted the attention of the late Sir Robert Stephenson, and on behalf of his master he carried out the drawings and experiments for the Conway and Britannia Bridges, and as Resident Engineer had control of the building of those bridges. Mr. Clark was for many years Chief Engineer to the Electric Telegraph Company. He invented and patented the hydraulic graving dock and canal lift. He constructed the great dock at Bombay, and others at Malta and London. He was the designer of many bridges, including the great swing-bridges at Arnheim, Lyons, and Rochester, the Aire Tubular Bridge, and the Scarborough Viaduct. He was the original inventor of the block system of signalling. Mr. Clark also laid the cable from Dungeness to Holland, and negotiated the agreements and erected the telegraph for the chief English railways. He was engineer to the Crystal Palace Company, and completed the building of the Palace after the fire. He was engineer of the grand harbour of Callao, in Peru, and of the pier and wharves at Colon. He was a pioneer in the practical application of pneumatic transit, and carried out the first application of the electric light to lighthouses. Mr. Clark afterwards undertook many important contracts, including the building of the marine canal from Cronstadt to St. Petersburg.

GENERAL BUILDING NEWS.

WEDGWOOD INSTITUTE, BURSLEM.—The Wedgwood Institute, the additions to which were formally opened on the 15th inst. by the Princess Louise, originally comprised a school of art, a laboratory, and a free public reading-room and lending library, the Free Libraries Act having been adopted by Burslem the first of the Pottery towns. The first floor was devoted to art class-rooms and a museum, whilst the second floor was devoted to science classes. The additions to the Institute, which have been designed by and carried out under the superintendence of Messrs. Ford & Slater, architects, Burslem, comprise two blocks of buildings; of these one is on the Baker-street side, and is three stories in height, with basement in addition. The ground floor comprises two large modelling-rooms, on the first floor is an antique class-room, above which is a large laboratory, in connexion with which is a lecture theatre, class-rooms, balance-room, and master's-room. Several years ago, owing to the liberality of Mr. W. Woodall, M.P., a museum was erected at the rear of the Institute, but this has been removed to another position, and the building is now utilised partly in connxion with the School of Art, and partly by the Science Department. The second block of buildings referred to is on the Brickhouse-street side, and is four stories in height, and this on the ground floor provides a large reference library and an extensive department for the librarian, the reference library being so arranged as to be in conjunction with the reading-room. On the first floor is a large class-room for elementary art, whilst on the second floor are provided two class-rooms for technical instruction, and on the top floor is a gymnasium, or it might be used in conjunction with the technical schools. On the Baker-street side the architects have purposely had regard to plainness of design, inasmuch as this portion of the building is somewhat excluded from view; but the elevation in Brickhouse-street is carried out to accord with the original part of the building so far as its height extends, but in order to gain as much room as possible, this addition to the Institute is carried up considerably higher than the original building. The walls of the buildings throughout are of red brick with strings and dressings of terra-cotta, the floors being of fireproof construction, of tiles laid on concrete resting on iron girders. The various rooms are warmed by hot water on the low-pressure system by Mr. W. Boulton. The building contracts have been carried out by Mr. Wm. Grant and Mr. W. Cooke, builders, of Burslem. The cost of the additional buildings, including fittings and heating, including also several alterations in the redecorating of the original buildings, is upwards of 5,000*l*.

SCHOOLS, LANGHAM, NORFOLK.—At a meeting of the newly-formed School Board, held at Langham on the 2nd inst., after considering several applications, it was resolved that Mr. Herbert J. Green, architect, of Norwich, be employed to submit plans for, and superintend the erection of, new schools, to be built at Langham for the Board.

SCHOOLS, HARWICH. — The Harwich School Board have given instructions to Mr. J. W. Start, F.S.I., architect, Harwich, to prepare plans for an infants' school to accommodate 150 children at Lower Dovercourt, this being the second block of buildings undertaken by the Board.

TECHNICAL SCHOOLS, MAIDSTONE.—On the 16th inst. the Duke of Cambridge opened the new

Technical Schools which have been built by the Maidstone Corporation. Architecturally the exterior of the Schools harmonises with the Museum, but the entrance is to be distinctly separate. The accommodation provided under the various departments is as follows:—1. In the Basement—Workshops, Heating Apparatus, and Storage. 2. On the Ground-floor—Entrance-hall, Library, Physical Science Lecture-room, Lecturer's Preparation-room and Student's Laboratory, Wood-carving-shop, Chemical Laboratory, large Lecture-room, Science Class-rooms, Masters' Room, and Store for Apparatus. 3. On the First Floor—Landing and Upper Hall (forming Picture Gallery), Committee-room, Art Master's Room, Elementary Art Class-room, Life Studio and Dressing-room, Painting-room, Antique Studio, Modelling-room, and Cast-store. All the studios have north or north-east light. The electric lighting machinery is accommodated in a separate building. The buildings are designed as part of a plan for the extension and completion of the Museum on the lower side by building a new Curator's house at the extreme west end, fronting St. Faith's-street, and erecting an extension of the Fine Art wing of the Museum on the site of the present house. This will form a second forecourt, of which the school entrance will form the north, and the Curator's house and new Museum wing the west and east flanks respectively. The entrance-hall of the schools will eventually be in communication with the Museum. The designs were prepared by Mr. Albert W. Smith, of the firm of Messrs. Ruck & Smith, Maidstone, and the contracts have been carried out as follows: general building, Messrs. Wallis & Sons; plumbing work, Mr. H. Brennan; heating apparatus, Messrs. Pryer & Co.; electric lighting, Messrs. Laing, Wharton & Down, London.

Grammar School, Paisley.—Plans of the new Grammar School, Paisley, have been accepted by the Burgh School Board, the successful architect being Mr. T. G. Abercrombie. There were several competitive sets. The building, which is estimated to cost about 19,000*l.*, will be erected at Crossflat, Glasgow-road. The edifice will be three stories in height, erected in the form of a square, which will be roofed over. The main entrance is embellished by a large portico, and the outline of the building is relieved by a tower rising on the right. On the ground floor are the rector's, visitors', and other accommodation, also the library, juniors, English, and initiatory departments. Upstairs needlework will be taught in a specially-arranged apartment, while rooms will be provided for teaching classics, modern languages, mathematics, &c. On the second floor students in science and art (including drawing, painting, and modelling) will be located, the advantage of top light from the north being available. There is also special accommodation for cookery lectures, and rooms are set apart as laboratories and for preparation purposes, together with one for lectures on science subjects. The enclosure above referred to as roofed over forms a hall, which will be used for drill, or on the occasion of examinations.—*Glasgow Herald.*

School Buildings, Burlington Chapel, Ipswich.—The memorial-stone was recently laid of an addition to the Baptists' school-room of the Burlington Chapel, Ipswich. The building is intended for infants' school and class-rooms. It is connected with the old room by a corridor and staircase hall, from which is approached the new infants' school-room—a room 25 ft. by 20 ft. Also approached from the hall is a copper room and china store. Upstairs is a ladies' room, 22 ft. by 16 ft., five new class-rooms, two being made in the place of the old staircase, which has been removed. On opening the revolving shutters and taking in part of the old building, a room is available 41 ft. by 18 ft., and on closing the shutters it is converted into three class-rooms. The entrance will be from London-road, which will be faced with eight windows. The plans were prepared by Messrs. Eade & Johns, and Mr. E. Catchpole is the builder.

New Opera House at Wakefield.—The New Royal Opera House, Wakefield, situated in Westgate, has, says the *Leeds Mercury*, been erected by Mr. B. Sherwood, from the designs and under the personal supervision of Mr. Frank Matcham, of London, Mr. J. P. Briggs, of London, acting as clerk of works. The building is practically fireproof, the corridors and staircases being constructed of iron and concrete. The galleries are built on the cantilever principle, and every person will have a full view of the stage. The auditorium is a large one, and is arranged as pit-stalls and pit on ground floor. The first floor has two private boxes, dress circle, and upper circle. The second floor is devoted to the gallery. The auditorium is wholly cut off from the stage by a thick proscenium-wall rising above the roof, and every opening is fitted with a self-closing iron door, and the proscenium with a fireproof curtain. The decorations, consisting of ornamental plastic work, have been carried out by Messrs. De Jong & Co., London, the prevailing colours being light blue, cream, and gold. The lighting arrangements have been entrusted to Messrs. Tollerton & Co., Leeds.

Restoration of St. Mary's Church, Bagillt, Flintshire.—This church is now undergoing considerable restoration at the hands of Mr. Richard Jones, contractor, from plans prepared by Mr. Pete Bibby, of Flint. The renovation includes the complete reseating of the church and other internal improvements.

Temperance Hall, Liskeard, Cornwall.—After undergoing alteration and renovation, Liskeard Temperance Hall was reopened by the Right Hon. Leonard Courtney, M.P., on the 22nd inst. The work has been carried out by Messrs. Reynolds & Elliott, of Liskeard, from the designs of Mr. Sansom.

Cottage Hospital, Porth, Glamorganshire.—The memorial-stones of the Porth Cottage Hospital were laid on the 18th inst. The building is being erected on an elevated portion on Cemetery-road, overlooking the valley. The contract is being carried out by Messrs. Charles Jenkins & Sons at a cost of 2,529*l.* 10s., and under the superintendence of Mr. F. Gibson, architect, Pontypridd.

New Schoolroom, Ellesmere College, Shropshire.—On the 18th inst. the Duke and Duchess of Devonshire laid the foundation-stone at Ellesmere College, Shropshire, of a new schoolroom. The new schoolroom is to be built from the designs of the college architects, Messrs. Carpenter & Ingelow. It will be 120 ft. long and 36 ft. wide, with a hammer-beam roof rising 50 ft. Ten large class-rooms will open out from the sides.

New Church, Bessingby, near Bridlington. Yorkshire.—The consecration by the Archbishop of York of the new church of St. Magnus, Bessingby, took place recently. The church, which has been designed by Mr. Temple Moore, of London, is in the Decorated style, and consists of nave with north and south aisles, chancel, vestry, and a central tower and spire, and is designed to seat 150 persons. The arches in the chancel and nave are of Ancaster stone, springing from pillars and piers of red Dumfries stone. The roof is panelled and decorated throughout. The east window represents the Crucifixion, and there are four other memorial windows. The pulpit, reading-desk, lectern, choir, stalls, and pews are all in solid oak. The chancel-floor is laid with black and white marble. There is also an organ by Messrs. Hill & Son, of London. All the internal fittings and the organ are the gift of Mr. Alfred Wright. The contractor for the work is Mr. J. Rennard, of Bridlington Quay, the oak fittings being made by Mr. Shepherdson, of Driffield. The whole of the stained glass has been supplied by Mr. H. Victor Milner, of London.

All Saints' Church, Goodmanham, Yorks.—The ancient Church of All Saints, Goodmanham, was reopened on the 20th inst. by the Archbishop of York. The church consists of a Norman western tower and nave, with north aisle of a Transitional character. The chancel is thirteenth century, and the original narrow Norman chancel arch still remains. The present work has been confined to the refitting, and repair of the nave. The plaster ceiling has been removed, exposing to view a simple seventeenth-century oak roof. The nave floor has been lowered to its original level and repaired, and the nave re-seated with simple oak benches. There is also a new oak pulpit. There is not sufficient money at present to restore the chancel and tower, but some new hangings and frontal have been presented to the church. The work has been carried out under the direction of Mr. Temple Moore, of London, the contractor being Mr. Atkinson, of Roos.

SANITARY AND ENGINEERING NEWS.

Opening of Deepdale Bridge, Barnard Castle.—This new bridge, erected after a futile attempt at spanning the Tees, in which a flood washed away all the scaffolding and temporary works, was opened for traffic on the 11th inst. The *Newcastle Daily Chronicle* describes it as consisting of three openings, spanned by continuous lattice girders, resting upon two abutments and two piers. The central span is 57 ft. from centre to centre of the piers, and each of the side spans are 35 ft. 6 in. from centre of pier to face of abutment. The main girders are placed 10 ft. apart, centre to centre, and, at the middle of their depth, carry a planked footway 10 ft. in width, while below the footway provision is made for carrying three lines of 25-in. water mains. Each pier consists of two cast-iron cylinders, 6 ft. in diameter, surmounted by columns 4 ft. in diameter, united by cast-iron stay-bracing, of arched form, bolted between them. Each column is united to the 6-ft. cylinder by a moulded cast-iron base, laid at the same level in all four columns, and surmounted by a moulded cast-iron cap. The several lengths of the columns, base, and 6-ft. cylinders are formed with internal flanges, and with machine-faced joints, and bolted together with 1-in. bolts and nuts. The 6-ft. cylinders are each formed in lengths, bolted together in the same way, the lowest length being cast with a cutting edge, while the height of the lengths and total height of the cylinders were determined by the level at which a good rock bottom was eventually found. The abutments, turrets, valve-wells, wing-walls, and terminal newels are in coursed rock-faced masonry. The plinths, girder-beds, pipe-rests, coping, string-courses, and corbels are executed in ashlar masonry. The stone came from the Stainton, Shaw Bank, and Dunhouse quarries, whilst the lattice rolled-work was supplied by Messrs. Head, Wrightson, & Co. Mr. Mansergh, of Westminster, was the engineer and architect, and Messrs. Walter Scott & Co. the general contractors for the work.

Completion of the Sewerage of Whitchurch.—This scheme, which has been carried out by the Cardiff Rural Sanitary Authority, is one of the many important improvements recently executed by that body with the view to the improvement of public health. The sewerage of the parish of Whitchurch extends over an area of about 2,000 acres, and is about eight miles in length, is based on the separate system, and consists of stoneware socket-pipes ranging in size from 6 in. to 15 in. in diameter, and emptying into the trunk sewer of the Ystradyfadwg and Pontypridd Joint Committee, which extends from the Rhondda to the Bristol Channel. The cost of the constructive part of the work was 4,360*l.* 3s. 11d. (398*l.* 15s. 8d. below the contract amount). Automatic flushing tanks are constructed at the principal dead ends, supplied by water from the Corporation mains. The gradients are so regulated as to make the whole of the sewers self-cleansing, and the manholes and lamp-holes are so arranged at each change of gradient and direction that any stoppages or obstructions can easily be found and removed. Gauges are fixed near each connexion with the trunk sewer to measure the quantity of sewage passing from the sewers of the Authority, and each section is disconnected by syphons fixed near the trunk sewer, to prevent foul gas passing up the sewers of the Authority from the trunk sewer. The scheme was designed and carried out by Mr. W. Fraser, A.M.Inst.C.E., the Engineer and Surveyor of the Authority.

Proposed Sewerage Scheme at Portishead.—On the 19th inst., Mr. Arnold Taylor, Deputy Chief Inspector to the Local Government Board, attended at the Assembly Hall, Portishead, to conduct an enquiry, the Portishead Local Board having applied for the sanction to borrow 14,000*l.* for works of sewerage and sewage disposal. Mr. J. C. Glyde, clerk to the Board, said there was no proper system of drainage at Portishead at the present time. The Corporation of Bristol were the largest owners of land at Portishead, and they raised no objection to the proposed scheme. The assessable rateable value was 11,815*l.*, the acreage of the district 976 acres, number of houses, 550. Mr. Moss Flower, C.E., of Bristol, Engineer for the scheme, read a report, in which he went in detail into the existing sewerage arrangement, and said the drainage was as bad as it could be; he thought that if typhoid-fever, diphtheria, or any other infectious disease broke out, there would be a very great difficulty in stamping it out. The report of the Engineer was subsequently endorsed by the Medical Officer of Health of the district. The Engineer next described the character of the works proposed to be carried out. There would be about eight miles of pipe-sewers. The sewage from the low-level would be lifted at two points automatically into the high-level gravitating-sewer, and the whole of the sewers on the low-level would be made perfectly water-tight. The sewage of the high-level and low-level would be taken out to sea, and discharged at all times on the top of ordinary high-water. The outfall would be constructed of 15-in. cast-iron pipes, supported on lines of elm piles, and taken out to a point below lowest water of lowest neap-tides. It was calculated that this outfall would suffice for a very large increase of population, as all rain and storm-water would, as far as possible, be taken to water-courses, or into the existing system of drains, which were to be repaired, cleansed, and extended, where necessary. There would be manholes at every change of line and gradient, flush tanks at the top end of all sewers, and disc valves on the outlets of nearly all the manholes. Some of the manhole-covers would be blank, and the remainder would be of such form as could be quickly opened and closed at will. A large number of ornamental ventilating columns and shafts up the sides of the houses would be erected throughout the system. The smallest gradient was a very short length of the main sewer, and here it was 1 in 250. Some of the ratepayers thought some of the existing sewers were good; that the sewage might cause a nuisance from the outfall; that the scheme was too expensive; and that some more modified scheme might be adopted; that they were afraid the works could not be done for the money; that the payment of the rate would prove a hardship to the small ratepayers, &c. The Inspector remarked that if a bit here might be good and a bit there good it was improbable that the good part would work into the other system, and that they were going to adopt a general system of sewerage, and no doubt it was an expensive scheme, but could they have an efficient scheme for less money? The Inspector, after closing the inquiry, had a private interview with the members of the Board, and pointed out the desirability of the Board enforcing the proper reconstruction of defective house-drains and a close supervision, as he (the Inspector) said it was useless to put in a new system of sewers, and leave the house-drains as they were, or for them to be altered imperfectly. The Board, we are informed, at once saw the necessity of giving effect to the Inspector's suggestions. Subsequently the Inspector, in company with the Engineer, inspected the district.

FOREIGN AND COLONIAL.

FRANCE.—The Parliamentary Commission of the Budget has just decided to put down altogether the "Direction des Bâtiments Civils," as being a useless and expensive machinery. In consequence of this suppression, which will probably be voted for by the Chambers, the different services of the division will be divided between the Ministers. The "Palais Nationaux," and the "Garde Meuble," will be returned to the Minister of Fine Arts, the diocesan buildings to the Minister of Worship.——There is to be an exhibition of Decorative Art in December, in the Georges Petit Gallery.——The jury of the Ecole des Beaux-Arts has just awarded the following prizes: grand medal of competition to M. Bernard; the Blouet prize to M. Recourat; Jay prize to M. Huillard.——On the 8th November a public exhibitlon of the competition arranged by the architect, M. Roux, will be held in the Ecole des Beaux-Arts; it is for the erection at Peronne of a statue of Marie Fourré, a heroine of the sixteenth century, who by her courageous conduct defended her native town, and prevented its falling into the hands of the Comte de Nassau, who beseiged it. The three sculptors who have taken part in the second trial are MM. Damé, Ferigoule, and Fossé.——The old hotel in the Avenue Champs Elysées, built under the Second Empire for the Marquise de Païra, has been converted into a restaurant; it was decorated by various eminent painters and sculptors.——The Arc de Triomphe is being restored. The cornice was a good deal shaken a few years ago by some fireworks let off on the platform at the top.——The new School of Commerce has just been inaugurated at Havre——Last Sunday at Pontivy the monument was inaugurated that has been erected in honour of the Bretonne-Angevine Federation. The architect of this monument is M. Deperthes, and the sculptors MM. Legoff and Chavailiaux.——The municipality of Lyons has decided that the monument to President Carnot shall be erected on the Place de la Republique. The subscriptions for it amount already to 259,000 francs.——A fine sword of sixteenth-century date, with a richly-chased pommel, and bearing the arms of Montmorency, has been found in the Seine, near Conflans.——The municipaity of La Flèche is about to raise a monument to Delibes, the composer, who was a native of the town.——A new promenade pier is to be built at Royan.——The rather sudden death is announced of the painter Jean d'Alheim, an artist Russian by birth but French by adoption, who was known for his very interesting studies on the coast of the Mediterranean, while his qualities as a colourist were equally seen in his Parisian landscapes taken at Montrouge, Montmartre, and on the banks of the Seine. He had brought from Moscow recently some curious sketches which he had intended to turn to account in his paintings for the Salon.

GERMANY.—It is now definitely stated that the new Imperial Houses of Parliament will be ready for the opening of the Session in the middle of next month.——Telephonic communication is to be established between Berlin and Western Pomerania, *viâ* Stettin and Stolp.——Work is shortly to be commenced on an extension of the tramway system to the Wilmersdorf suburb.——The cost of the alterations at the Berlin Opera House, which are to be commenced next year, will be set down as 25,000*l.* in the forthcoming Prussian Budget.——The Royal Academy of Arts announces the conditions of the competitions for six annual travelling studentships, of a total value of 940*l.* Amongst these is one of 165*l.* reserved to architects.——Professor Dr. Pfleiderer has been duly installed as Rector of the Berlin University.——At a meeting of the Provincial Diet at Dusseldorf, it was decided to co-operate with the Rhenish and Westphalian interests in petitioning the Minister of Public Works to reintroduce the Bill for extending the Emshaven-Dortmund canal to the Rhine.——A monument to the Emperor William I. has been unveiled by the Grand Duke of Baden at Mannheim. The type chosen is an equestrian statue, from designs by Professor Eberlein, of Berlin.——A new chapel, to accommodate 450 persons, has been consecrated at Potsdam, in the presence of the Empress, who had contributed 1,500*l.* towards the building fund.

RUSSIA.—An important archæological find is announced from Kertch, Crimea, where a well-preserved marble figure of a lion has been discovered in the ruins of the Pantikapaeon. The work, which is 7 ft. high, and undoubtedly of Classical origin, represents the animal with his paw resting on the head of an ox he has slain, and from certain points is presumed to date from 200 to 300 B.C. It will be placed in the "Hermitage" at St. Petersburg.

SWITZERLAND.—The Simplon Tunnel project is again attracting general attention, as, although the Italian Government, whilst agreeing with the plans, has practically refused any financial support, the province of Turin is gradually being won over to the merits of the scheme. As several of the neighbouring Italian provinces have already promised to contribute, a definite plan for the raising of the necessary capital may shortly be expected.

NORWAY.—A syndicate has been formed in Christiania for the acquisition of a valuable site in the centre of the business part of the city, 2,650 mètres square, on which is to be erected a group of large commercial buildings.——It has been decided to erect a new lunatic asylum for north-central Norway in the town of Bodö, on the north-west coast, the architect being Herr Sohlberg.——It has also been decided by the Crown to build a new Asylum for Seafaring Men in Bergen, at a cost of 212,000 kr., for which plans and designs have been prepared by Herr Schak Bull, architect.——On the new railway from Lillehammer to Flisen, Herr Due, architect and President of the Norwegian Association of Architects and Engineers, has just completed a terminus station, at a cost of 70,000 kr.; whilst at Strömmen a large new club-house has been finished for the local Workmen's Association.——A company has been formed in the town of Porsgrund for the construction of electricity works for lighting and industrial purposes.——At the Helgeraa, in the Christiania Fjord, new harbour works are being constructed at a cost of 50,000 kr.——The great marble deposits in the province of Nordland are now being quarried with a view chiefly of introducing the stone as building material in the Scottish and English market. The stone, in all colours, may be delivered in British port for 90 kr. (5*l.*) per cubic mètre. It is now being largely used by Norwegian architects.——One of the most important excavations ever effected in Norway are those of the castle of Stenviksholm, on an island in the Throndhjem's fjord, which have now been in progress for two years. The ruins, &c., laid bare are the most extensive and interesting in the country. Although the ruins have for centuries served as a kind of quarry for the forts of Throndhjem and the peasantry, the result of the excavations has exceeded expectations. The whole of the interior, with chambers, vaults, and towers (two), has been laid bare, whilst many interesting antiquities have been discovered. Many architectural ornaments have also been found, and a museum has been arranged in one of the excavated chambers. The castle, which dates from the twelfth century, was built by a Norse archbishop.

MISCELLANEOUS.

NEW HARBOUR WORKS IN DENMARK.—Engineering works of considerable magnitude are in course of construction in the Limfjord, in Jutland, the cost being estimated at 415,000 kr. Concrete blocks weighing from 12,000 lbs. to 16,000 lbs., are used in the construction. The works include the building of a pier and railway into the fjord, 5,000 ft. in length.

THE LIVERPOOL MASTER BUILDERS' ASSOCIATION.—This Association held their annual meeting on the 4th inst. at their offices, 6, Lord-street, Liverpool, Mr. J. Sirett Brown presiding. The report and accounts for the past twelve months were read and adopted, and the officers for the ensuing year were appointed, with Mr. William Hall as President. The report states that the notices received from the various branches of the building trades for advances in wages, reduction in working hours, and alterations in trade rules have all been amicably settled, and that all the trades (with the exception of the masons) are now working to an uniform code of rules. Last autumn notices were received for a reduction of the working hours and an advance of wages from the bricklayers, plasterers, slaters, plumbers, and painters, and also from the bricklayers' and plasterers' labourers, and the committee considered this a good opportunity for endeavouring to effect such alterations in the general rules as to make them applicable to all the various branches of the trade. The masons and carpenters and joiners were working virtually the hours the other trades desired—viz., what is popularly called the nine hours' system; but to effect a uniform code of rules it was necessary to serve them with a notice of the proposed new rules, which was done. These rules were drafted by the committee, and submitted to a special meeting of the Association and approved of. The Association has considerably increased the number of its members during the past year.

SANITARY INSTITUTE.—The Council of this Institute have arranged for a second course of free public lectures on the "Sanitation of Industries and Occupations," to be delivered at the Parkes Museum. The subjects include "Quarrying of Various Kinds," by Mr. Le Neve Foster (Thursday, Nov. 8), and "Workers in Copper, Zinc, Brass and Tin," by Mr. R. M. Simon (Thursday, Nov. 29).

MODEL LODGING-HOUSES, SALFORD.—Messrs. Faulkner & Sons, in regard to the notice of these buildings in our last issue, wish to point out that the divisions of the cubicles are constructed with their patent steel sheets with a double rib or corrugation on each edge of the sheets, which gives them sufficient strength to dispense with any framework when they reach from floor to ceiling. The same sheets have been used by the London County Council in their Parker-street lodging-house.

THE STOCKHOLM INDUSTRIAL EXHIBITION.—The working committee of the Industrial Exhibition to be held in Stockholm in 1897 has now presented its report. The committee proposes that it shall be held on the so-called Lejon Plain, where a site having an area of 142,000 square mètres is to be acquired. The cost of construction on this spot is estimated at 2,342,775 kr., and the working expenses at 600,000 kr. The total receipts are reckoned at 1,480,000 kr., so that a sum of 1,470,000 kr. will have to be obtained in another manner. Two other sites are, however, under consideration, where the cost would be much less, but they are not so centrally situated.

WATER SUPPLY IN THE DISTRICT OF HOLYWELL.—At a meeting of the Holywell Rural Sanitary Authority on October 19 a special report on the condition of the water supplies in the western portion of the district was presented by Dr. Williams, the Medical Officer of Health. According to this report, many of the larger hamlets were almost without pure and reliable water supplies. Several places near Gwispyr, Newmarket, and Sarn were in a serious state, and required looking to at once. The Sanitary Inspector was instructed to inquire and report as to what measures should be adopted to provide sufficient water supplies for the various localities.

THE SANITARY INSPECTORS' ASSOCIATION.—In connexion with the course of lectures and demonstrations arranged by the Sanitary Inspectors' Association for sanitary officers, Professor Vivian B. Lewes, F.C.S., F.I.C., delivered the second of a series of five lectures on "Combustion and the Influence of its Products on Health," at St. James's Hall, Piccadilly, on Monday evening. Mr. H. Thomas, of Bermondsey, presided. Professor Lewes now dealt with the prime factor in combustion, viz., the atmosphere, premising that they had a good deal to learn and realise before they were in a position to tackle the products of combustion and the influences they had upon air and upon health. Having said that the atmosphere did not begin to have a scientific history until the seventeenth century, he referred to the experiments upon air which were made in 1643 by Torricelli, and which led to the discovery of the first great physical fact ever found out about it, which was that the atmosphere had weight. Illustrations of atmospheric pressure followed, and having alluded to Robert Boyle's subsequent discovery of the compressibility of gases, the lecturer said that when the composite nature of the atmosphere was first discovered, it was supposed by Cavendish and others to be a chemical compound of nitrogen and oxygen. John Dalton, the founder of our present atomic theory of chemistry, however, had since found it to be a mechanical mixture of the gases contained in it. The laws by which that mixture was kept so constant as it was were amongst the most marvellous that could be found in nature, and those laws they would come across during these lectures. Professor Lewes's next point was that the atmosphere contained many other things besides oxygen and nitrogen, and these other gases, he said, it had always been the fashion till lately to talk of as impurities, but no greater mistake was ever made; such gases were only impurities when they rose above a certain limit. There were three minor constituents of the atmosphere—carbon dioxide, water vapour, and minute traces of ammonia. These were all required by nature for natural work, and impurities proper only existed where the cause for them existed; for instance, where there were open drains the presence of sewer-gas in the air would be noticed, while in the Midland Counties, in Lambeth, and wherever salt glazing was carried on, they would find traces of hydrochloric acid. The way in which carbon dioxide was produced in nature was nearly always by combustion, the oxygen taken from the air by combustion being replaced by carbon dioxide; it was produced wherever there was carbon, or where there was respiration and a process of decay. In some parts of the world carbon dioxide issued from the ground to an enormous extent. The lecturer explained that the water-vapour in the atmosphere allowed life to go on, and that its presence depended upon the temperature; and, finally, he pointed out how ammonia gas was needed by plant-life, and how, particularly, by a heavy fall of rain, it was dissolved and brought down to the vegetation that required it. Professor Lewes's third lecture will be delivered next Monday evening.

BOROUGH ENGINEER APPOINTMENT, READING.—Mr. J. Bowen, A.M.Inst.C.E., Borough Surveyor, of High Wycombe, Bucks, has been recommended by a committee of the Reading Town Council for the appointment of Borough Engineer. The other candidates selected and interviewed by the Council (out of a total number of 111 applicants) were Mr. Thomas Reader Smith, A.M.Inst.C.E., of Kettering. Mr. Campbell, A.M.Inst.C.E., of Stratford-on-Avon, Mr. Witts, of Leeds, Mr. F. W. Howard, of Reading, and Mr. W. Jane, of Reading. Mr. Jane acted as Borough Engineer during the period of about three months since the appointment of the late Borough Engineer, Mr. Collins, A.M.Inst.C.E., to the City Engineership of Norwich.

CITY AND GUILDS INSTITUTE EXAMINATIONS IN PLUMBING, 1894.—There has been no break in the steady and continuous increase in the number of candidates for examination in plumbers' work. The numbers for the past five years have been successively 569, 684, 825, 988, and this year rose to 1,253, the largest yet reached. Of the 1,253 candidates examined this year 192 have passed in the Honours Grade and 460 in the Ordinary. In the examination

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
* New Club Premises	Union Club, Belfast	50*l.* & 20*l.*	Nov. 30
* Municipal Offices	Blackpool Corp.	105*l.* 52*l.* 10*s.* & 26*l.* 5*s.*	Jan. 21'95
*Museum for Antiquities, Cairo	Egyptian Government	First 600*l.*, and 400*l.* between the next four	Mar. 1, '95

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Paving Works	Camberwell Vestry	O. S. Brown	Oct. 29
*Jarrah Wood Blocks	do.	do.	do.
*Brick Channelling	Southend-on-Sea Corp.	C. T. Copley	do.
Chapel and Vestry, New Tredegar, Mon.	English Baptist Connexion	W. S. Williams	Oct. 30
Sanitary Works, Stoughton Schools	Guildford Sch. Bd.	S. Wellman	do.
*Sewerage Works, Burton-on-Trent	Burton-on-Trent Corp.	J. E. Swindlehurst	do.
*Supply of Iron Pipes	do.	do.	do.
*Making-up Roads	Tottenham Local Bd.	P. E. Murphy	do.
*Roadmaking and Paving Works	Bromley Loc. Bd.	*Official*	do.
Goods Shed and Offices, Reading	G. W. R. Co.	do.	do.
Schools, Tweedale-street	Rochdale School Bd.	do.	do.
Waterworks	Kendal U.R.S.A.	do.	do.
*Fifty Street Lanterns	Bermondsey Vestry	do.	Oct. 31
Additions, &c. to Asylum, Sligo	Lunacy Commrs.	do.	do.
*Tooled York Paving	Mile End Old Town Vestry	J. M. Knight	do.
Refuse Destructor, Lumley-street	Sheffield Corporation	C. F. Wike	do.
Pipe-laying, Tredegar, Mon.	Abertillery Loc. Bd.	Togarmah Rees	do.
Road Metal	Altrincham Loc. Bd.	Jno. Stokoe	do.
Six Cottages, Kirby-le-Soken, Essex	Col. R. P. Davis		do.
Four Shops, Offices, &c. The Parade, Neath, Glam.	Llewellyn & Sims	T. C. Wakeling	Nov. 1
*Galvanised Iron Pails	St. Matthew's (Bethnal Green) Vestry	F. W. Barratt	do.
Business Premises, Market-place	J. Bolam & Sons	Geo. Reavell, jun.	Nov. 2
Additions, &c. to Oddfellows' Hall, Southampton		J. H. Blizard	do.
*Oil Gas Works, Leicester	M. R. Co.	*Official*	do.
Additions to Offices at Workhouse	Cannock (Staffs) Union	do.	do.
Road Works, Foxbridge-row	Normanton Loc. Bd.	do.	Nov. 3
Surveyors' Materials, Swinton, Lancs.	Pendlebury Loc. Bd.	do.	do.
Town Hall and Offices	Rathmines (Ireland) Commrs.	T. Drew	do.
Schools, Starbeck	Harrogate Sch. Bd.	H. & E. Marten	do.
Five Houses, Hotspur-place, Alnwick	Hardy Bros.	M. Temple Wilson	Nov. 5
*New Schools, Lobbies, and Lavatories	Newhaven School Bd.	Clayton & Black	do.
Sewers, Roads, &c. Tividale, near Dudley	Upper Stour Valley Main Drainage Board	Marten & Fiddian	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Pumping Station with Pipes, &c.	Hospital of St. Cross, Rugby	J. Darby	Nov. 6
*Making-up Roads	Acton Local Board	D. J. Ebbetts	do.
Offices, London-road, East Grinstead	Hastie, Little, & Hughes	H. E. Matthews	do.
*Broken Granite	East Ham Local Board	W. Savage	do.
* Wrought Iron Unclimbable Fencing	do.	do.	do.
*Wooden Fencing	do.	do.	do.
Shelter, &c. Recreation Ground, Belgrave-road	Leicester Corporation	E. G. Mawbey	do.
*Heating, New Public Offices, &c.	Leyton Local Board	J. Johnson	do.
Road Diversion, near Cardiff	Glamorgan C. C.	*Official*	do.
Bridge Work, near Cardiff	do.	do.	do.
*Kerbing, Tarpaving, Metalling, &c. Works	Lewisham Bd. of Wks.	do.	do.
*Portland Cement	Folkestone Corp.	do.	do.
Additions to Schools, Peddars-lane	Beccles (Suffolk) Sch. Board	Arthur Pells	Nov. 7
Pipe Sewer, &c. Maxwelltown, Dumfries, N.B.		J. H. Barbour	do.
Market Hall, Shops &c.	Goole Local Board	W. J. Tennant	do.
Schools, Warley-road	Halifax School Board	Horsfall & Williams	do.
*Alterations to House at Bowes Manor	Parish of St. Mary, Islington	W. Smith	Nov. 8
Additions to Schools, Woodnewton, Wansford	The Vicar		do.
Cast-Iron Mains, Engine-Shed, &c.	Pershore (Worcester) U.R.S.A.	J. E. Willcox	Nov. 12
Schools (St. James'), Accrington	Rev. J. P. Petty	T. Newbigging	Nov. 13
Retort House, Offices, &c. Gwern-y-Gerwn	Pontypridd Loc. Bd.		do.
*Drainage Machinery	East Molesey Loc. Bd.	J. C. Melliss	Nov. 14
*Erection of School	Stifford School Board	A. J. Gale	do.
*Drainage Work	St. Saviour's Union	H. Jarvis & Son	Nov. 15
Sewerage Works	Felixstowe and Walton Local Board	G. S. Horton	Nov. 19
Reconstructing Stage at Pier, Limerick		Jno. Horan	Nov. 23
House at Schools, Ashton-gate	Bristol School Board	F. B. Bond	Nov. 29
*Lunatic Asylum, near Leek	Staffordshire C. C.	Giles, Gough, & Trollope	Nov. 30
*Pulling Down Houses, Eastbourne	Molineux Whitfeld & Co.	Mitchell & Ford	No date
Schools, St. George's Church, Wigan		Heaton & Ralph	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Sanitary Inspectors	Paddington Vestry	100*l.*	Oct. 31
*Sanitary Inspector	Islington Vestry	104*l.*	Nov. 1
*Clerk of Works	Torquay Corporation	3*l.* 3*s.*	Nov. 2
*Surveyor	St. Leonard's Vestry, Shoreditch	300*l.* &c.	Nov. 6

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv., vi., viii. *and* ix. *Public Appointments, pp.* xviii. *and* xx.

in practical work, which is optional and sufficiently difficult to indicate that a candidate who passes it is a skilful plumber, 450 candidates presented themselves, as against 293 in the previous year, and of the 450, 202 candidates satisfied the examiners, and 168 of those candidates also passed the written examination. To meet the large increase in the number of candidates, arrangements were made for the Practical Examinations to be held in forty-four centres outside London as against twenty-seven in the previous year. In order to prevent any difference arising in the character of the test, all the material, consisting of sheet-lead, pipes, and solder, was of uniform character and forwarded from London to the forty-four centres for examination. At each centre a local examiner was appointed to superintend and report upon candidates' work, and at the close of the examination all the work was forwarded to London to be marked by the chief examiner. The percentage of passes of the students at the London Classes was 19 per cent. in the Honours Grade, and forty-one in the Ordinary. These percentages were somewhat higher for the rest of the kingdom.

COMMISSIONERS OF SEWERS.—At the meeting of the Commissioners of Sewers of the City of London, held on the 23rd inst., the principal subject of discussion was the question of erecting a crematorium at the City Cemetery, Ilford, which was one of the recommendations of the Sanitary Committee presented by the chairman, Mr. Banister Fletcher. It was urged in favour of the proposal that the evidence of medical men was unanimously in favour of cremation as the most sanitary method of disposal of the dead, that the danger to a great community of the present modes of burial, where as many as fourteen coffins were occasionally to be found heaped one on another in cemeteries without any earth separating them, was too great to be long tolerated, and that there was too much reason to fear that unless a move was made soon in the provision of a crematorium the City might be taken by surprise some day by an order from the authorities in peremptory terms to provide for cremation. Mr. Deputy White and those members who supported the amendment which he moved—"that no further action be taken in the matter"—maintained that, judging by the crematorium at Woking, it would be very costly. The Woking Crematorium would suffice for many years to come for the wants of the metropolis, since, compared with the number of deaths, the bodies cremated were an infinitesimal quantity. On a show of hands, the amendment was declared lost by a considerable majority; and on the proposal of the Sanitary Committee being made a substantive resolution, there was again a majority in its favour. A division was claimed by Mr. Deputy White, the result being very close. In favour of the construction of the crematorium, 19 votes were cast; and against it, 17.

PRESENTATION.—At a recent meeting of the Hornsey and Crouch End Local Board of Health, before the ordinary business of the Board was commenced, Mr. T. De Courcy Meade, M.Inst.C.E., attended to receive the resolution passed by the Board, regretting Mr. Meade's removal from the district, and congratulating him upon his appointment at Manchester, which had been engrossed on vellum and framed. The Chairman said he had much pleasure in presenting the resolution, which was but a slight acknowledgment of the long and faithful services Mr. Meade had rendered to the ratepayers of the district, and a small mark of the esteem in which he was held by the members of the Board. He congratulated the citizens of Manchester in having secured a surveyor of such ability and experience as Mr. Meade. Mr. Meade said it was with the profoundest gratitude that he came there to receive the testimonial. He had given fourteen years' service to Hornsey, and all that time he had received nothing but kindness from the present members of the Board and those who had left the Board. He should take away with him the kindest of feelings of the district of Hornsey and the Board. He had used his best endeavours while there, and he was glad they were satisfied.

CONFERENCE OF MASTER-PAINTERS.—An international convention of master-painters and decorators, which is to extend over three days, was opened on Tuesday in the Memorial Hall, Manchester. The representatives were welcomed to Manchester by Mr. W. G. Sutherland, President of the Association of Master Plasterers and Painters of Manchester and Salford, who said that whilst confessing their many shortcomings in respect to their external environments, Manchester people were proud to believe that they had been in the past and were to-day "citizens of no mean city." In the discharge of its duties the municipality had played no inconspicuous part, and had time and again demonstrated its ability to realise a noble ideal and its power to carry it out. The Thirlmere water scheme, now just completed, and that great engineering triumph, the Ship Canal, furnished testimony to the energy and enterprise of the community in material affairs, and side by side with these were many indications that the citizens were not wholly given up to sordid pursuits. The Madox Brown frescoes in the Town Hall which they would have an opportunity of seeing would show them that Manchester's civic rule had large conceptions as to their duties in respect of the cultivation of the æsthetic side of life. With regard to the object of the convention, he took it that it was to lay the foundations of a society which would have jurisdiction over the area of the United Kingdom, and which would have for its object the welding together into one harmonious fabric the trade, craft, or profession—call it what they would—of the painter and decorator. There was, in his opinion, abundant need for a society such as was proposed, and the time for establishing it was opportune. On the motion of Colonel Bennett (Glasgow), seconded by Mr. John Taylor (Birmingham), Mr. Cantrill, the local secretary to the master painters, was elected secretary to the convention. A committee was appointed to draft the rules of the proposed organisation and submit to a future meeting. In the afternoon the members had an excursion on the Ship Canal. The proceedings of the conference were resumed in the evening, when the report of the committee appointed to draft rules was considered, and two papers were read and discussed, one by Mr. Thomas Bonnar, of Edinburgh, entitled "Some Suggestions on the Establishment of an Institute of House Painters and Decorators," and the other on "Existing Associations," by Mr. H. McCulloch, President of the Association of Master Painters in Scotland.

MEETINGS.

FRIDAY, OCTOBER 26.

Architectural Association.—Annual General Meeting, (1) Presentation of Prizes and Medals. (2) Address by the President (Mr. E. W. Mountford), 7.30 p.m.

Sanitary Institute (Lectures to Sanitary Officers).—Dr. R. T. Hewlett on "Elementary Bacteriology," 8 p.m.

SATURDAY, OCTOBER 27.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Inspection of Aylesbury Dairy Company's Premises, Bayswater.

MONDAY, OCTOBER 29.

A. A. Camera Club (56, *Great Marlborough-street*).—Mr. F. O. Bynoe on "The Frena Hand Camera, and its special suitability to Architectural Photography," 8 p.m.

Sanitary Inspectors' Association (*St. James's Hall*).—Professor Lewes on "The Atmosphere and its Sanitary Relations," II. 7.30 p.m.

Sanitary Institute (*Lectures for Sanitary Officers*).—Sir Douglas Galton on "Ventilation, Warming, and Lighting," 8 p.m.

TUESDAY, OCTOBER 30.

University Extension Society (*Chelsea Centre: Chelsea Town Hall*).—Mr. Arnold Mitchell on "English Architecture," IV. 3 p.m.

WEDNESDAY, OCTOBER 31.

Carpenters' Hall (*Lecture to Students on Sanitation*).—Professor Banister Fletcher on "Sanitary Building Construction." 8 p.m.

Sanitary Institute (*Lectures and Demonstrations for Sanitary Officers*).—(1) Inspection and Demonstration of the East London Soap Works, Bow, E. 3 p.m. (2) Mr. H. Law on "Principles of Calculating Areas, Cubic Space, &c.; Interpretation of Plans and Sections to Scale." 8 p.m.

FRIDAY, NOVEMBER 2.

Sanitary Institute (*Lectures for Sanitary Officers*).—Mr. J. Wallace Peggs on "Water Supply, Drinking Water, Pollution of Water." 8 p.m.

SATURDAY, NOVEMBER 3.

Sanitary Institute (*Lectures and Demonstrations for Sanitary Officers*).—Inspection and Demonstration of the Wimbledon Sewage Works. 3 p.m.

Incorporated Association of Municipal and County Engineers.—Autumn Meeting at Bushey and Hampstead.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

20,616.—FIREPLACES: *R. Bowes.*—This invention has for its object an apparatus and method for doing away with the present expensive and heat-dissipating or abstracting metallic fireplaces. It consists essentially in forming a fireclay or metal and fireclay trough, having a series of grate-bars, supported on the sides of this trough, some distance from the bottom. The bottom of the trough serves as an ashpit, and the trough itself holds the fire.

21,051.—CISTERN FOR WATER-CLOSETS: *H. Smith.*—The following are the novel points in the arrangement and mechanism of this invention:—(1) A self-closing ball-tap actuated by its own pressure; (2) a large flush with a small head of water; (3) water remains in the cistern only when in use, thus preventing any corroding or bursting by frost; (4) levers are actuated by the seat and cord, thus making it a self-acting closet.

21,218.—FIRE-GRATES: *R. Crosthwaite.*—The back and body is of metal, the front portion fitted with fire-bars, the whole being pivotted in or upon suitable standards with side-plates, &c. Centrally above the grate is a fixed flue of such dimensions that when the back is brought forward by turning the body upon its pivots, the flue is more or less closed or more or less opened when the grate is turned back. The flue-opening may thus be easily varied as required.

21,376.—HOFMAN KILNS: *G. Dean.*—The arrangement of the smoke-flues, hot-air-flues, and outlets for steam are so planned as to give greater draught and increase the capacity of the flue.

22,215.—SCREW WRENCHES: *W. Dicks.*—In these wrenches a screw-driver is so fixed at the end or base of the tool that it is available for use when the wrench is opened.

24,680.—DRAIN-PLUG: *M. Syer.*—In this plug a hollow tube or stem with a shoulder is used, and a cap and boss, with four projecting arms, and a double-flanged sunk circular plate, with a recess or groove to receive the indiarubber ring which forms the stop.

3,496.—COVERING BRICK WALLS: *L. Tebbut.*—Small sheets of enamelled iron or tin are affixed over the bricks when laid, or on concrete walls when they are plastic. The idea is to provide the enamelled sheets with overlapping edges, to prevent the entrance of water between them and the cement or mortar.

15,440.—TUNNELS: *A. S. Dandridge.*—The main core of the tunnel-shell is protected by longitudinal chambers containing a preservative liquid.

NEW APPLICATIONS FOR LETTERS PATENT.

OCTOBER 8.—19,047, G. Skinner, Heating Soldering-irons.—19,056, W. & P. Wheeler, Apparatus for curing smoky chimneys and ventilating purposes.—19,063, R. Rose, fire-grates.—19,068, E. Seaman, Window-fastener.—19,088, F. Jack, Syphon-cistern.—19,094, J. Clemence and others, Domestic and other Fire-places.

OCTOBER 9.—19,119, J. Foote, Pulley-casing for Window-frames.—19,132, W. Wilfood, Brick-kilns.—19,138, A. Bright, Lift for the Ventilators or Sashes of Greenhouses, &c.—19,180, C. Balph & E. Wright, Fireproof Floors and Ceilings.

OCTOBER 10.—19,213, R. Morris, Improved System for Smoky Chimneys and Ventilators, to prevent down-cast.—19,214, B. Dadley. Cranes and Hoisting Machinery.—19,233, J. Keith, Radiators for heating and ventilating.—19,247, G. Kenyon & E. Moorhouse, Electrical Ceiling-roses.—19,282, A. Butchard, Paint-brushes, &c.

OCTOBER 11.—19,296, J. Dobson, Kitchen-ranges.—19,325, T. Mossman, Construction of Fire-proof Floors and Roofs.—19,326, W. Fletcher & J. Tatham, Sash-fastener.—19,331, A. Austin, Opening Window-sashes inwardly.—19,357, P. Willis, Window-sash-fastener.—19,365, W. Blair, Window-catches or Sash-fasteners.

OCTOBER 12.—19,374, W. Plested, Sharpening Saws.—19,396, H. Parry, Kilns for burning Limestone, &c.

OCTOBER 13.—19,447, J. York and G. Whittle, Step and Stair Protector.—19,454, C. Merrick, Levels, Theodolites, &c.—19,455, J. Stock and others, Syphon Flushing-cisterns.

PROVISIONAL SPECIFICATIONS ACCEPTED.

15,443, J. Carruthers, Bench-vice.—17,149, E. Mowell and others, Sliding-sash Windows.—17,232, F. Hayes, Wood-block Paving and Pavements.—17,522, W. Crombie and the Paragon Bolt Syndicate, Limited, Mortice-bolts.—17,847, F. Holloway, Construction of Walls of Buildings.—17,865, W. Whitaker, jun., Tippers and Tipper-boxes of Waste Water-closets.—17,936, J. Gillespie, Excavators or Dredgers.—18,045, S. Watkins, Stoves and Ranges.—18,210, G. Cory, Composition for Roads, &c.—18,229, J. Peake, Appliance or Appliances for use in Making Hip, Ridge, and Valley-tiles for Roofing purposes.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

19,757, C. Nixon, Fastener for Windows, Doors, &c.—23,923, F. Bostel, Flushing Cisterns.—9,519, T. Cosham, Filtering-beds.—16,500, C. Jost, Glazing and Securing Glass in Frames.—17,423, W. Cliff, Water-closets.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

OCTOBER 9.—By *Worsfold & Hayward* (at Ashford): Butcher's Hole Farm, near Hythe, Kent, 41 a. 1 r. 33 p., f. r. 55*l.*, 785*l.*; Higham Hill and Gyminge Brook Farms, near Westhanger Station, 45 a. 1 r. 23 p., f., 1,200*l.*; Seath's Farm, Ivychurch, about 8 acres, f., r. 35*l.*, 320*l.*

OCTOBER 15.—By *Nightingale, Philips & Page*: Nos. 42 and 44, Tulse Hill, u.t. 24 yrs., g.r. 23*l.*, r. 95*l.*, 450*l.*—By *Boulting & Mallett*: 5, Ruvigney Gardens, Putney, u.t. 85 yrs., g.r. 10*l.*, r. 50*l.*, 555*l.*—By *Sudlow, Herrick & Sons*: "Woodside," Queen's-rd., Kingston Hill, f., r. 110*l.*, 1,300*l.*; "Albert Villa," Victoria-rd., Norbiton, f., r. 70*l.*, 885*l.*; "Halifax House," Alexandra-rd., u.t. 72 yrs., g.r. 20*l.*, r. 100*l.*, 825*l.*; 1 and 2, Lynton Villas, u.t. 72 yrs., g.r. 12*l.*, r. 65*l.*, 450*l.*; "Parkhouse," and Plot of Land, u.t. 72 yrs., g.r. 15*l.*, r. 55*l.*, 400*l.*—By *P. M. Puckridge*: "Melrose," Prospect Hill, Walthamstow, u.t. 90 yrs., g.r. 6*l.*, r. 40*l.*, 400*l.*; 78, Amagh-rd., Old Ford, u.t. 61 yrs., g.r. 4*l.*, 150*l.*; 89, Hewlett-rd., u.t. 71 yrs., g.r. 8*l.*, 255*l.*; 7, Tollitt-st., Mile End, u.t. 33 yrs., g.r. 3*l.* 3s., 240*l.*; 23 and 24, King John-st., Stepney Green, u.t. 50 yrs., g.r. 3*l.*, 430*l.*; 1 to 4, Garrick's Buildings, Limehouse, c., 350*l.*

OCTOBER 16.—By *Matthews & Matthews*: 116 to 122, even, Antill-rd., Tottenham, u.t. 75 yrs., g.r. 18*l.*, 640*l.*; 127 to 133 odd, Tiverton-rd., Woodberry Down, u.t. 82 yrs., g.r. 14*l.*, 380*l.*—By *Debenham, Tewson, & Co.*: 18, Bridgewater-sq., Barbican, f.r. 80*l.*, 1,600*l.*—By *F. J. Bisley*: 26 and 52, Ashburnham-grove, Greenwich, u.t. 53 yrs., g.r. 9*l.* 5s., r. 56*l.*, 495*l.*; 12, 13, and 17, Southcres., u.t. 19 yrs., g.r. 7*l.*, 240*l.*; 27 and 29, Russell-pl., Blackheath, u.t. 38 yrs., g.r. 6*l.*, 245*l.*; 13 and 15, Brightfield-rd., Lee, u.t. 66 yrs., g.r. 6*l.*, 290*l.*; 32 and 34, Brightfield-rd., u.t. 66 yrs., g.r. 6*l.*, 290*l.*; 29, Belmont-hill, and plot of land, u.t. 6 yrs., g.r. 4*l.*, 75*l.*—By *Field & Sons*: 17, 19, and 21, Russell-rd., Peckham, f., r. 78*l.*, 860*l.*; 94 to 100 even, Sumner-rd., u.t. 69 yrs., g.r. 14*l.*, 400*l.*; 112, Olney-st., Walworth, u.t. 21 yrs., g.r. 3*l.* 3s. 6d., r. 25*l.*, 140*l.*; 31 and 33, Lindley-st., Mile End, u.t. 6 yrs., g.r. 4*l.*, 75*l.*; 1 to 10, Victoria-pl., Peckham, f., r. 158*l.*, 1,175*l.*; 49, Manor-st., Clapham, u.t. 14 yrs., g.r. 5*l.* 10s., r. 35*l.*, 150*l.*; f.g.r. of 20*l.*, Chatham-row, Walworth, reversion in 78 yrs., 400*l.*; f.g.r. of 30*l.*, Oakley-st., Lambeth, reversion in 79 yrs., 555*l.*

OCTOBER 17.—By *Beal & Myrtle*: F.g.r. of 50*l.*, Lordship-pl., Chelsea, reversion in 96 yrs., 1,250*l.*; 1, Marylebone-rd., Regent's-pk., u.t. 24 yrs., g.r. 10*l.*, r. 95*l.* (moiety only) 500*l.*—By *G. Brinsley*: 173 and 175, Lorrimore-rd., Walworth, u.t. 28 yrs., g.r. 10*l.*, r. 56*l.*, 370*l.*—By *H. J. Bromley*: F.g.r. of 12*l.*, Martell-rd., Dulwich, reversion in 66 yrs., 320*l.*; f.g.r. of 42*l.*, Martell-rd., ditto in 83 yrs., 1,065*l.*; f.g.r. of 12*l.*, Myton-villas, ditto in 83 yrs., 325*l.*; f.g.r. of 18*l.*, Rosendale-rd., ditto in 88 yrs., 475*l.*; f.g.r. of 45*l.*, Rosendale-road, ditto in 83 yrs., 1,155*l.*; f.g.r. of 52*l.*, Uxbridge-villas, ditto in 86 yrs., 1,340*l.*; f.g.r. of 36*l.*, Arklow-ter., ditto in 83 yrs., 940*l.*; 97, Rosendale-rd., f., r. 60*l.*, 700*l.*; a plot of f. land, Wolfington-rd., Norwood, 110*l.*; "Glenrose," St. Julian's Farm-rd., u.t. 95 yrs., g.r. 7*l.*, 295*l.*; "Hyburn Wyke" and "Glencoe," St. Julian's-rd., u.t. 95 yrs., g.r. 14*l.*, r. 72*l.*, 610*l.*; By *Foster & Cranfield*: 162, Long-lane, Borough, f., r. 28*l.*, 300*l.*; 68, Neal-st., Long Acre, f., r. 50*l.*, 760*l.*; 2, Denmark-grove, Barnsbury, f., r. 38*l.*, 470*l.*; 15, Rodney-pl., f., r. 40*l.* 6s., 300*l.*; a plot of f. land, Beckenham-rd., 55*l.*: 41, Northampton-st., Islington, u.t. 24 yrs., g.r. 5*l.*, r. 30*l.*, 180*l.*; 14, Richmond-cres., Barnsbury, u.t. 56 yrs., g.r. 8*l.*, r. 52*l.*, 500*l.*; 35, Richmond-rd., u.t. 47 yrs., g.r. 8*l.*, r. 42*l.*, 350*l.*; 42, Nutford-pl., Edgware-rd., u.t. 6 yrs., g.r. 20*l.*, r. 30*l.*, 25*l.*; 39, Brown-st., u.t. 6 yrs., g.r. 6*l.* 16s. 6d., r. 40*l.*, 90*l.*; 2, 4, and 12, Fitzwilliam-rd., Clapham, u.t. 64 yrs., g.r. 16*l.* 5s. 6d., r. 96*l.*, 860*l.*; 5 and 7, London-rd., Forest Hill, u.t. 40 yrs., g.r. 10*l.*, r. 128*l.*, 875*l.* By *Fuller, Moon, & Fuller* (at Balham): "Cornwall Cottage," 2, Devonshire-rd., Balham, u.t. 33 yrs., g.r. 40*l.*, r. 84*l.*, 250*l.*

OCTOBER 18.—By *W. Winterton*: 1, Ribston-st., Hackney, u.t. 66 yrs., g.r. 5*l.* 5s., 75*l.*—By *H. J. Bliss & Sons*: 17 to 23, odd, Bartley-st., Brixton, u.t. 54 yrs., g.r. 10*l.*, 510*l.*; 280, Rotherhithe New-rd., Bermondsey, u.t. 53 yrs., g.r. 5*l.*, r. 35*l.*, 200*l.*; 290, 292, 294, 300, 302, and 304, Rotherhithe New-rd., u.t. 53 yrs., g.r. 30*l.*, 1,155*l.*; 39 and 51, Roll's-rd., u.t. 52 yrs., g.r. 10*l.*, 385*l.*; 264, Roll's-rd., u.t. 52 yrs., g.r. 5*l.*, r. 30*l.*, 230*l.*—By *Newbon & Co.*: The "White Horse" Beer House, East Wickham, Kent, thirteen cottages, and 9½ acres of land, 485*l.*; f.g.r. of 77*l.*, Queens's-cres., Haverstock Hill, reversion in 57 yrs., 2,350*l.*; f.g.r. of 18*l.*, Queen's-cres., reversion in 54 yrs., 560*l.*; f.g.r. of 32*l.*, Malden-rd., reversion in 57 yrs., 960*l.*; f.g.r. of 145*l.*, Herbert-st., reversion in 73 yrs., 3,955*l.*—By *Glasier & Sons*: No. 3, Brompton-sq., f., r. 100*l.*, 1,850*l.*; 190, 192, and 194, Blomfield-ter., Westbourne-pk., u.t. 48 yrs., g.r. 30*l.*, r. 200*l.*, 1,330*l.*; f.g.r. of 111*l.* 8s., Tonsley Hill, Wandsworth, reversion in 67 yrs., 2,820*l.*: f.g.r. of 7*l.*, Tonsley Hill, reversion in 93 yrs., 170*l.*; f.g.r. of 34*l.*, Tonsley-pl., reversion in 67 yrs., 835*l.*; f.g.r. of 12*l.* 12s., St. Ann's-rd., reversion in 58 yrs., 320*l.*; f.g.r. of 16*l.* 16s., St. Ann's-rd., reversion in 67 yrs., 420*l.*; f.g.r. of 6*l.* 10s., Summers Town, reversion in 65 yrs., 175*l.*; f.g.r. of 4*l.* 10s., Summers Town, reversion in 54 yrs., 115*l.*; f.g.r. of 12*l.* 12s., Lydden-rd., reversion in 72 yrs., 270*l.*; 490 and 492, Wandsworth-rd., f., r. 66*l.*, 690*l.*; f.g.r. of 6*l.*, Farm-lane, Walham Green, reversion in 47 yrs., 150*l.*; "The Somer's Arms," Usk-rd., Battersea, f., r. 32*l.*, 610*l.*; 24, New-st., Covent Garden, f., r. 75*l.*, 1,250*l.*—By *Boyton & Pegram* (at Fulham): 95, Bayonne-rd., Fulham, f., 350*l.*; 195 to 201 odd, Dawes-rd., u.t. 40 yrs., g.r. 20*l.*, r. 109*l.*, 760*l.*; 19 and 21, Pellant-rd., u.t. 83 yrs., g.r. 10*l.*, r. 65*l.*, 380*l.*; 2 to 18 even, Aintree-st., f., 1,280*l.*; "The Eagle Brewery," Aintree-st., f., r. 20*l.*, 470*l.*; three plots of f. land, Aintree-st., 625*l.*

OCTOBER 19.—By *Toplis & Harding*: No. 50, Haymarket, u.t. 21 yrs., g.r. 73*l.* 10s., r. 140*l.*, 810*l.*; No. 59, Eccleston-sq., u.t. 32 yrs., g.r. 18., r. 313*l.* 10s., 2,750*l.*—By *Baker & Sons*: 156, Burdett-rd., Stepney, u.t. 71 years, g.r. 6*l.*, r. 34*l.*, 350*l.*; 164 and 166, Burdett-rd., u.t. 72 yrs., g.r. 12*l.*, r. 68*l.*, 785*l.*; 55 and 57, Turner's-rd., Limehouse, u.t. 69 yrs., g.r. 10*l.*, r. 79*l.* 10s., 525*l.*; 139 and 141, Turner's-rd., u.t. 68 yrs., g.r. 9*l.*; r. 78*l.* 12s., 530*l.*; 17 and 18, Leopold-st., u.t. 68 yrs., g.r. 9*l.*, r. 78*l.*, 620*l.*—By *W. B. Hallett*: 2 and 4, Haverstock-rd., Haverstock Hill, u.t. 68 yrs., g.r., 10*l.*, r. 78*l.*, 400*l.*; 29, 30, and 31, St. Leonard's-sq., Kentish Town, u.t. 55 yrs., g.r. 15*l.* 15s., 600*l.*; 3 and 5, Weedington-rd., u.t. 46 yrs., g.r. 2*l.*, 550*l.*; 1, Stuckley-pl., Camden Town, u.t. 37 yrs., g.r. 3*l.*, 160*l.*; 42, Kemerton-rd., Camberwell, f., r. 54*l.* 12s., 505*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G. ton	8/0/0	0/0/0
Teak, E.I. .. load	10/0/0	16/0/0
Sequoia, U.S.ft.cu	1/10	2/2
Ash, Canada load	3/0/0	4/5/0
Birch, do.	2/15/0	4/0/0
Elm, do.	3/15/0	5/0/0
Fir, Dantsic, &c.	1/12/0	3/5/0
Oak, do.	2/10/0	4/10/0
Canada	5/15/0	7/5/0
Pine, Canada red	2/10/0	3/0/0
Do. Yellow	3/0/0	5/5/0
Lath, Dantsic, fath	4/10/0	5/10/0
St. Petersburg..	5/0/0	6/10/0
Wainscot, Riga, &c., log	2/15/0	5/0/0
Odessa, crown	2/15/0	5/0/0
Deals, Finland and 1st std 100	7/0/0	9/0/0
Do. 4th & 3rd	7/0/0	8/0/0
Do. Riga	7/0/0	8/10/0
St. Petersburg, 1st yellow	9 10/0	12/10/0
Do. 2nd yellow	7/10/0	9/10/0
Do. white	5/0/0	10/10/0
Swedish	7/0/0	15/0/0
White Sea	6/12/0	14/10/0
Canada, Pine 1st	22/0/0	26/10/0
Do. do. 2nd	17/0/0	18/0/0
Do. do. 3rd, &c.	7/10/0	10/10/0
Do. Spruce, 1st	8/10/0	10/0/0
Do. do. 3rd & 2nd	6/10/0	7/10/0
New Brunswick	6/0/0	7/0/0
Battens, all kinds	3/0/0	15/0/0
Flooring boards, sq., 1 in. prep.	0/9/6	0/14/6
1st	0/7/0	0/11/6
Other qualities—	0/5/0	0/6/6
Cedar, Cuba .. ft.	/3½	/4½
Honduras, &c.	/3½	/4½
Mahogany, Cuba	/3½	/6
St. Domingo, cargo av.	/3	1/6
Mexican do. do.	/3	/4
Tobasco do. do.	/3½	/6
Honduras do. ..	/3½	/5½
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio	7/0/0	18/0/0
Bahia	6/2/0	17/0/0
Satin, St. Domingo	0/0/5	0/1/0
Satin, Porto Rico	0/0/6	0/1/6
Walnut, Italian ..	0/0/3½	0/0/7

METALS.

Iron—Pig, in Scotland ton	2 2 5	0/0/0
Bar, Welsh, in London	5/12 6	5/15/0
Do. do. at works in Wales	5/0/6	5/5/0
Do. Staffordshire, in London	6/0/0	6/10/0
COPPER—British cake and ingot	43 5/0	43/15/0
Best selected ..	43 15/0	44 5/0
Sheets, strong ..	51/10/0	0 0/0
Chili, bars	40/10 0	40/15 0
YELLOW METAL lb	0/0/4¾	0/0/4¾
LEAD—Pig, Spanish ton	9/16 3	9/17/6
English com. brands	9/18 9	10/0/0
Sheet, English, 6 lbs. per sq. ft. and upwards	10/15/0	11 0 0
Pipe	11/15/0	0/0/0
ZINC—English sheet ton	18/10/0	19/0/0
Vieille Montagne	19/10/0	0/0/0
TIN—Straits	67/2/6	67/12/6
Australian	67/5 0	67/15/0
English Ingots..	72/0/0	72/10/0
Banca	71/0/0	71/10/0
Billiton	71/0/0	71/10/0

OILS.

Linseed ton	20/15/0	21/5/0
Cocoanut, Cochin	28/10/0	0/0/0
Do. Ceylon	24/10/0	0/0/0
Palm, Lagos	25/10/0	0/0/0
Rapeseed, English pale	21 0/0	0/0/0
Do. brown	19/10/0	0/0/0
Cottonseed ref.	18/10/0	19 10/0
Oleine	22/0/0	24/0/0
Lubricating, U.S.	4/0/0	5/0/0
Do. refined	5/0/0	12/0/0
TAR—Stockholm barrel	0/20/0	0/0/0
Archangel	0/11/6	0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursday.*]

ASHTON-UNDER-LYNE.—For sewering, paving, draining, &c., Curzon-road, for the Corporation. Mr. J. T. Earnshaw, C.E. Borough Surveyor, Town Hall, Ashton-under-Lyne:—
Wm. Neal, Ashton-under-Lyne ..... Schedule list.

BROADSTAIRS.—For the erection of a convalescent home, Broadstairs, for Mr. C. J. W. Rabbits, J.P. Mr. A. G. Hennell, architect, Forest Hill, S.E. Quantities by Mr. J. R. Vining, 89, Chancery-lane, W.C.:—

H. Burman & Sons	£3,269	J. T. May	2,690
W. H. Lascelles & Co. ..	2,849	Holloway Bros.	£2,575
Jas. Longley & Co.	2,825	J. Brown & Sons	2,565
A. Black & Son	2,800	Jas. J. Wise	2,489
Paramor & Sons	2,700	W. W. Martin, Ramsgate*	2,097

* Accepted.

CARDIFF.—For forming, metalling, paving &c., Plasturton-avenue, Sneyd-street, &c., for the Corporation:—

E. Foyatt, Richards & Co.	£3,843 1 1	Richard Smith	£2,766 7 0
E. R. Evans	3,199 3 5	Ellis & Davis	2,659 14 10
F. Ashley	3,152 14 1	J. Rich	2,628 4 4
W. Best & Co.	2,877 5 4	E. H. Page	2,431 17
Barnes, Chaplin & Co.	2,776 19 10	[All of Cardiff.]	

CARDIFF.—For the erection of new biscuit factory and warehouses at Cardiff, for Messrs. Spillers Nephews' Biscuit Company, Limited. Messrs. Veall & Sant, architects, Cardiff. Quantities by the architects:—

	£ Mths.		£ Mths.
Price & Wills	24,201.. 15	H. Willcocks & Co.	21,140.. 12
W. Thomas & Co.	23,054.. 12	James Allan	20,955.. 15
Stephens, Bastow, & Co.	22,879.. 12	C. C. Dunn	20,940.. 12
Shepton & Son	22,618.. 24	H. Gibbon	20,404.. 12
Hatherley & Carr	22,375.. 11	G. H. Wilkins	20,110.. 9
Lattey & Co.*	21,750.. 10	W. Symonds & Co., Cardiff (accepted)	19,637.. 12
Knox & Wells	21,300.. 11		

* Or in seven months, £25,000.

DUNNET (Caithness).—For the construction of a pier, Dwarwick Head, for the County Council. Mr. Jas. Barron, C.E., 166, Union-street, Aberdeen:—

Forbes & McLeod	£316 14 0	John Ross	£486 13 8
R. C. Brebner	396 2 9	Peter Bain	448 8 0
Tait & Reid	541 7 0	James Drever	421 12 0
Geo. Rhind	497 15 0		

GUILDFORD.—Accepted for new drainage at the Royal Surrey County Hospital, Guildford:—
W. Cunliffe, Kingston-on-Thames £285

HARROGATE.—Accepted for sewering, levelling, paving, &c., Hyde Park-road and other streets, for the Corporation. Mr. Samuel Stead, Borough Surveyor, Municipal Offices, Harrogate:—

Hyde Park-road.
John Pierson, Harrogate £394 9

Back road from Park View to East Parade.
John Pierson, Harrogate £210 5 6

Myrtle-road.
Matthew Hall, Bradford £333 15 10

Myrtle-square.
Matthew Hall, Bradford £174 5 2

Myrtle-square, eastern portion.
Matthew Hall, Bradford £138 1 5

HIGH BARNET.—For the erection of new factory for the Dental Manufactory Company at High Barnet. Mr. A. E. Hughes, architect, 28, Mortimer-street:—

Williams & Sons	£3,374	Adamson	£2,855
Faulkner	3,000	Matthews	2,787
Butcher	2,964	Ward & Lamble	2,779
Dow	2,933	Voller	2,416

IPSWICH.—For the supply of 800 yards stoneware sewer-pipes. Mr. E. Buckham, Borough Surveyor, Town-hall, Ipswich:—

	Per yard.		Per yard.
W. Ingram & Sons	£1 5 0	J. Place & Sons	£1 2 0
F. S. Mays	1 3 6	Doulton & Co., Lambeth Pottery*	1 1 3
J. Cliff & Sons	1 2 6	Oates & Green	1 1 0
J. Knowles & Co.	1 2 6	Imperial Stone Co.	1 0 2
Wragg & Sons	1 2 6		
B. Pratt & Co.	1 2 0		

* Accepted.

LEEDS.—For the erection of outbuildings, offices, walls, &c., Rothwell, for the Local Board. Messrs. T. H. & W. E. Richardson, architects, Imperial-buildings, 28, Bond-street, Leeds. Quantities by architects:—

Brickwork and Masonry.—John Chapman, Rothwell, near Leeds	£1,407 0
Carpentry and Joinery.—J. Ingleson & Son, Leeds	373 0
Slating.—T. E. Heavyside, Leeds	99 15
Plumbing and Glazing.—Geo. Wilson, Rothwell, near Leeds	139 7
Plastering.—T. Moore, Leeds	65 0
Painting.—A. & G. Barker, Rothwell, near Leeds	27 10

LLANDRINDOD WELLS (Wales).—For the erection of a villa residence, for Miss Wilding. Messrs. A. B. & W. Scott-Deakin, architects, Shrewsbury and Llandrindod Wells:—

Wm. Lewis & Co.	£1,976	Robt. E. Davies	£1,378
Chas. Edwards	1,531	Peter Morris, Llandrindod*	1,340
John O. Williams	1,576		

* Accepted.

LLANDRINDOD WELLS.—Accepted, exclusive of interior painting, for erecting a photographic studio, shop, &c., Station-crescent, for Mr. H. R. Sharples, of Builth. Messrs. A. B. & W. Scott Deakin, architects, Shrewsbury:—

Robt. E. Davies, Llandrindod £410

LONDON.—For carrying out the following works in connexion with the drainage and sanitary arrangements of the undermentioned schools, for the School Board for London:—

Providing a new system of drainage, erecting new offices for all departments, and carrying out alterations to the existing water-closets and lavatories, Turin-street, Hackney:—

McCormick & Son	£2,712	Staines & Son	£2,055
Knight & Son	2,358	J. Marsland	2,055
W. Downs	2,169	Stevens Bros.	1,974
Calnan & Co.	2,118	E. Triggs, Clapham *	1,934
Williams & Son	2,059		

Providing a new system of drainage and reconnecting the drains to the infants' offices, Holden-street, West Lambeth:—

H. King & Sons	£614 10 3	Lathey Bros.	£562 0 0
W. Downs	597 0 0	Garrett & Son	547 0 0
S. Polden	589 0 0	G. & F. Kent	545 0 0
Holliday & Greenwood	587 0 0	Whitehead & Co.	525 0 0
W. Hammond	579 0 0	E. Triggs, Clapham *	515 0 0

* Accepted.

LONDON.—For providing a drawing class-room, a manual training-room, and a chemical laboratory for the school in Beresford-street, Walworth, and for enclosing, draining, and tar-paving the additional land which has been acquired by the Board, for the School Board for London. Mr. T. J. Bailey, Architect:—

		For brickwork in cement, add
Johnson & Co.	£2,844 14 0	£63 0 0
McCormick & Son	2,529 0 0	36 0 0
Mid-Kent Building and Contracting Works, Ltd.	2,392 0 0	45 0 0
W. Holt & Sons	2 318 13 8	31 15 3
J. & C. Bowyer	2,312 0 0	45 0 0
J. Smith & Sons, South Norwood*	2,260 0 0	45 0 0

* Recommended for acceptance by the Works Committee.

LONDON.—For the provision of a manual training centre in connexion with the Brackenbury-road School, Hammersmith, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement, add
G. Lyford	£1,287 0 0	£17 0
S. Polden	1,189 6 0	20 5
Cowley & Drake	1,122 0 0	37 10
T. Chinchen	1,048 9 3	15 15
G. & F. Kent, 11, Whiteheadsgrove, Chelsea*	958 0 0	17 0

* Recommended for acceptance by the Works Committee.

LONDON.—For refitting the offices in connexion with the boys' department of the Monnow-road School, Bermondsey; for enlarging the infants' offices; erecting new offices for girls' department; and for providing a new system of drainage, for the School Board for London. Mr. T. J. Bailey, Architect:—

William Downs	£1,190	W. Akers & Co., South Norwood*	£924
Lathey Bros.	989		
B. E. Nightingale	936		

* Recommended for acceptance by the Works Committee.

LONDON.—For the provision of a laundry centre in connexion with the Sieaford-street school, Battersea, for the School Board for London.—Mr. T. J. Bailey, Architect:—

		For brickwork in cement, add
W. H Castle	£927 18 0	£22 19 4
W. Hammond	856 0 0	24 0 0
L. Whitehead & Co.	659 0 0	13 0 0
W. Akers & Co.	620 5 8	18 3 1
Lathey Bros.	580 0 0	11 0 0
G. & F. Kent, Chelsea *	548 0 0	10 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For rebuilding 192, Kennington Park-road, S.E., for Mr. S. Blaiberg. Mr. J. A. J. Woodward, architect:—

H. Hall	£1,531	J. Marsland	£1,395
H. Burman & Son	1,530	J. Hooper	1,208
J. Ford	1,455	Parsons	1,237

LONDON.—For fitting-up shop premises, 143, High-street, Kensington, for the United Kingdom Tea Company, Limited. Mr. A. G. Hennell, architect, Forest Hill, S.E.:—

Kendal, Milne, & Co.	£954	Holloway, Bros.	£808
Burman & Sons	856	Johnson & Co.	795
Kearley	827	Black & Son (accepted)	721

LONDON.—Accepted for alterations, repairs, and various works to shops and houses on the Rosemary Estate, Shepperton-road, Islington, for Mr. W. P. Griggs:—

John Welbking & Sons £555

LONDON.—For alterations and additions to the Police Station at South Fulham, for the Receiver for the Metropolitan Police District. Mr. John Butler, Architect. Quantities by Mr. W. H. Thurgood:—

Holloway	£1,940	Hart Bros.	£1,680
Scrivenor	1,697	Grover	1,673
Higgs & Hill	1,694	Lathey	1,610
Gillingham	1,687		

LONDON.—For laying cold-water mains and hot and cold water and gas supplies at the Fulham Union Workhouse, for the Guardians of the Fulham Union. Mr. A. Saxon Snell, 22, Southampton-buildings, Chancery-lane, W.C.:—

Berry & Sons	£620	Rosser & Russell, Charing-cross, S.W., (accepted)	£533
Hughes, Sutton, & Digby	600		
May Bros.	594		

LONDON.—For alterations to the "Glo'ster" Tavern, 187, Sloane-street, Belgravia, for Messrs. Hall & Pinn. Mr. Alex. S. Paterson, architect, 12, North-street, Westminster:—

Garlick & Horton	£1,449	Burman & Son	£1,022
Saunders & Sons	1,222	Edwards & Medway	992
Turtle & Appleton	1,176	Beer & Gash	987
Brown	1,125	Dearing & Son, Islington*	895

* Accepted.

For Pewterers' work.

Burley	£65 11	Heath*	£56 0
Edwards	53 0		

* Accepted.

LONDON.—For painting exterior and basement of Town Hall, Fulham. Mr. Charles Botterill, Surveyor to the Vestry of Fulham:—

G. H. Thorby	£170	S. E. Storr	£115
Nepperschmidt & Herrmann	120	E. Swann	115
T. Smith	117	C. Humphrey	110
		W. H. Smith (accepted)	89

MEOLE BRACE (near Shrewsbury).—For two cottages now in course of erection, exclusive of glazing, painting, and inside plumbing. Messrs. A. B. & W. Scott Deakin, architects, Shrewsbury:—

Salter & Sons	£525 6 4	Thos. Morris	£439 0 0
Wm. Swain	486 0 0	Robt. Everall & Sons, Shrewsbury*	430 0 0
Thos. Pace	445 0 0		

* Accepted.

NOTTINGHAM.—For new cookery-class-room, conveniences, &c., at the Alfreton-road Board Schools, for the School Board. Mr. A. H. Goodall, architect, Market-street, Nottingham. Quantities by architect:—

J. Skerritt	£1,184 12 6	T. Whittaker	£1,020 0 0
A. G. Bell	1,177 2 6	Gilbert & Gabbitass	1,000 0 0
J. Hutchinson	1,117 0 0	Emerson & Franks	1,000 0 0
H. Vickers	1,095 0 0	F. Wartnaby	995 15 0
A. B. Clarke	1,065 0 0	J. Cooper	994 10 0
J. Chambers	1,059 0 0	G. A. Pillatt	990 0 0
W. Gell & Son	1,056 11 0	T. Barlow	987 17 4
W. Maule	1,055 0 0	T. Cuthbert	987 0 0
J. H. Vickers	1,047 0 0	G. F. Slight	985 0 0
J. G Thomas	1,025 17 0	G. Caulton, Peverill-street, Nottingham*	985 0 0
F. Evans	1,025 0 0		

* Accepted.

NUNNEY, near Frome (Somerset).—For the erection of new Board Schools and teacher's residence. Mr. E. H. Lingen Barker, architect, Hereford:—

T. Parfitt	£1,873 8 6	Love & Waite	£1,565 0 0
G. H. Wheeler	1,685 0 0	F. J. Seward	1,549 10 0
G. H. Wilkins	1,604 3 7	F. Chancellor	1,507 0 0
S. Harding	1,596 0 0	W. Dowland	1,480 0 0
Macandrews & Co.	1,590 0 0	C. Barnes, Frome	1,250 0 0

* Accepted.

ORPINGTON (Kent).—For additions and alterations to private residence. Mr. St. Pierre Harris, architect, &c., 8, Ironmonger-lane, E.C., and Orpington:—

Somerford & Son ..... £109 | W. Owen (accepted) £65

ORPINGTON (Kent).—For erection of new building in connexion with the Village Hall, for Mr. A. Brown. Mr. St. Pierre Harris, architect, &c., 8, Ironmonger-lane, and Orpington:—

General Building Works.

W. Owen ..... £110 | Somerford & Son (accepted) £99

Ironwork.

W. Harbrow (accepted) £212

REDRUTH (Cornwall).—For the construction of a large storage reservoir, certain intake works, Lower Penstruthal and Gordon; and the supply, laying, &c., of about 10 miles c.i. socket-pipes, &c., for the Local Board. Mr. H. Bertram Nichols, C.E., Grosvenor-chambers, 59, Corporation-street, Birmingham. Quantities by the engineer:—

Godfery & Co.	£14,215 15 0	The Clay Cross Co.	£8,569 15 8
Garlick & Horton, Limited	14,198 3 8	Herbert Weldon	8,413 1 3
James Dickson	11,785 0 0	Wm. Jenkins & Son	7,977 0 0
Wm. Trevena	9,979 0 0	W. H. Thomas & Son	7,765 15 0
Wm. C. Shaddock	9,672 0 0	James Julian	7,695 0 0
E. Duke	9,556 0 6	John Shaddock	7,680 0 0
Wm. B. Berry	9,469 3 0	John White Fereday	7,566 0 0
Hy. Roberts	9,377 0 0	Abraham Delboidge, Camborne*	7,301 11 0
George Shellabear	8,990 0 0		

* Accepted.

SALISBURY.—For the erection of three houses, Winchester-street, for Mrs. George Main. Mr. Alfred C. Bothams, C.E., architect, 39, Castle-street, Salisbury. Quantities by architect:—

Dyson	£1,430 0	E. Witt	£1,281 10
Kite	1,383 0	Gilbert Harris, Dewsroad, Salisbury*	1,240 0
Hale	1,334 0		
Wort & Way	1,333 10		

* Accepted.

SEAFORD.—For drainage works at Seaford, Sussex, for the Seaford Local Board. Mr. B. A. Miller, Surveyor:—

E. Steer	£690	Fry	£610
Berry	683	Bell	599
Piper	630	Saunders, Bournemouth*	539

* Accepted.

[Surveyor's estimate, £661.]

SHREWSBURY.—For new shop-front and alterations to No. 8, Castle-street, for the British Workman's Public-house Company. Messrs. A. B. & W. Scott Deakin, architects:—

Henry Farmer	£393	Henry Price	£279
Wm. Bowdler & Co.	350	Richard Price & Sons	255

[All of Shrewsbury.]

STOURHEAD (Wilts).—Accepted for the restoration of the ancient "Bristol High Cross," in Stourhead Park, for Sir Henry Hoare, Bart. Mr. Charles E. Ponting, F.S.A., architect, Lockeridge, Marlborough:—

Harry Hems & Sons, Exeter £450

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SURBITON.—For shop-fittings, &c., to premises at Surbiton, for Messrs. Rabbits & Sons, Ltd. Mr. A. G. Hennell, architect, Forest Hill, S.E.:—

Holloway	£464	Johnson & Co. (accepted)	£60
Burman & Sons	460		

TYLORSTOWN (Wales).—For the erection of eighty houses, Penyrheol, for the trustees of the Stanley Building Club. Mr. T. R. Philips, architect, Old Bank-chambers, Pontypridd:—

C. Jenkins & Sons, Porth, near Pontypridd £13,180

WATFORD.—For the supply of 500 tons hand-broken granite for the Local Board:—

W. A. Judkins, Nuneaton ..... 7s. per ton.

YOUGHAL (Ireland).—For the erection of a cottage, &c., for the Joint Burial Board. Mr. Lynch, C.E., care of David Fitzgerald, 2, Catherine-street, Youghal:—

T. McSwiney	£448 0	Js. Callaghan	£390
Wm. Callaghan	345 14	J. Aherne	95
McMurray & Son	308 10		

[All of Youghal.]

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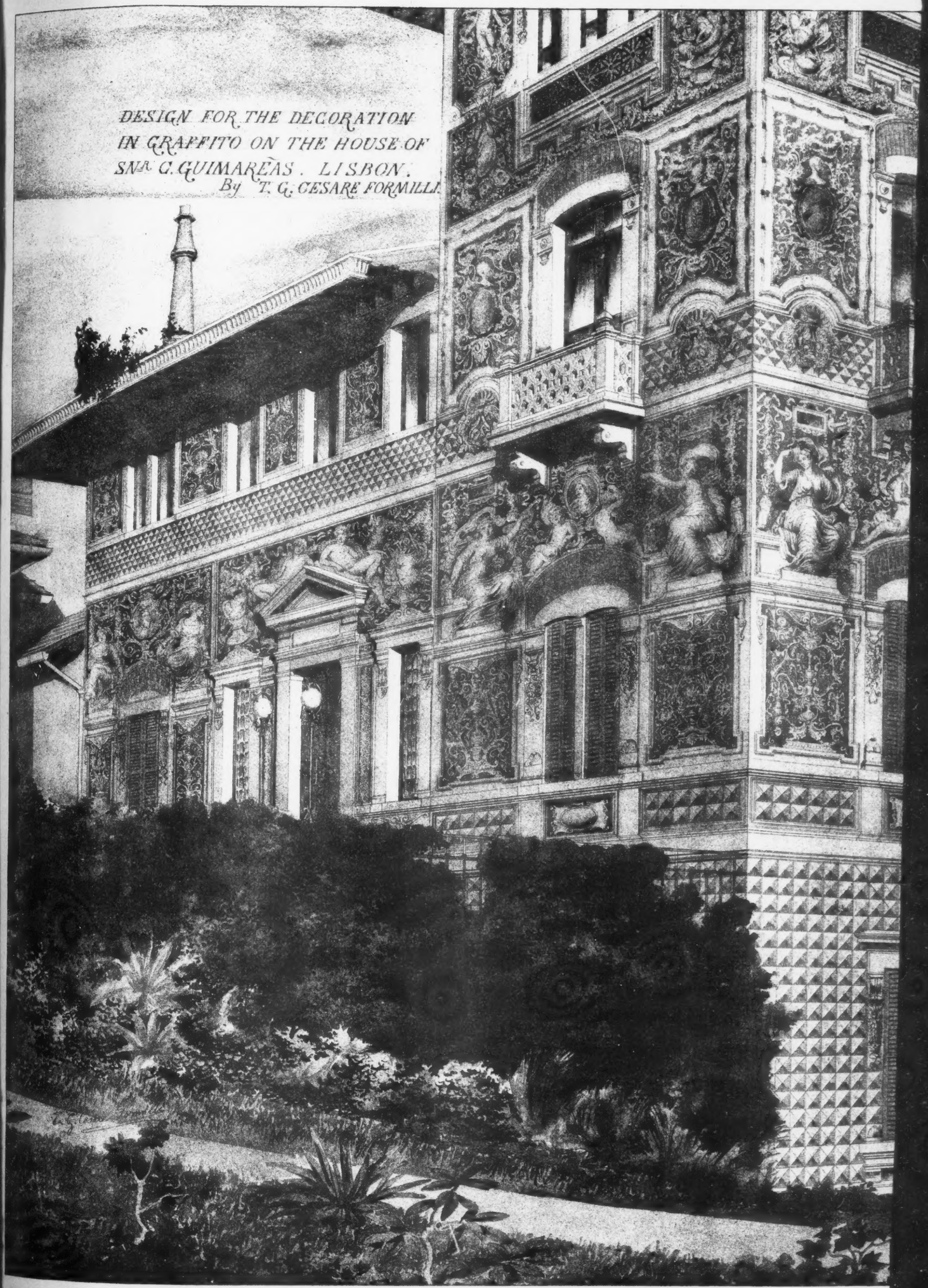

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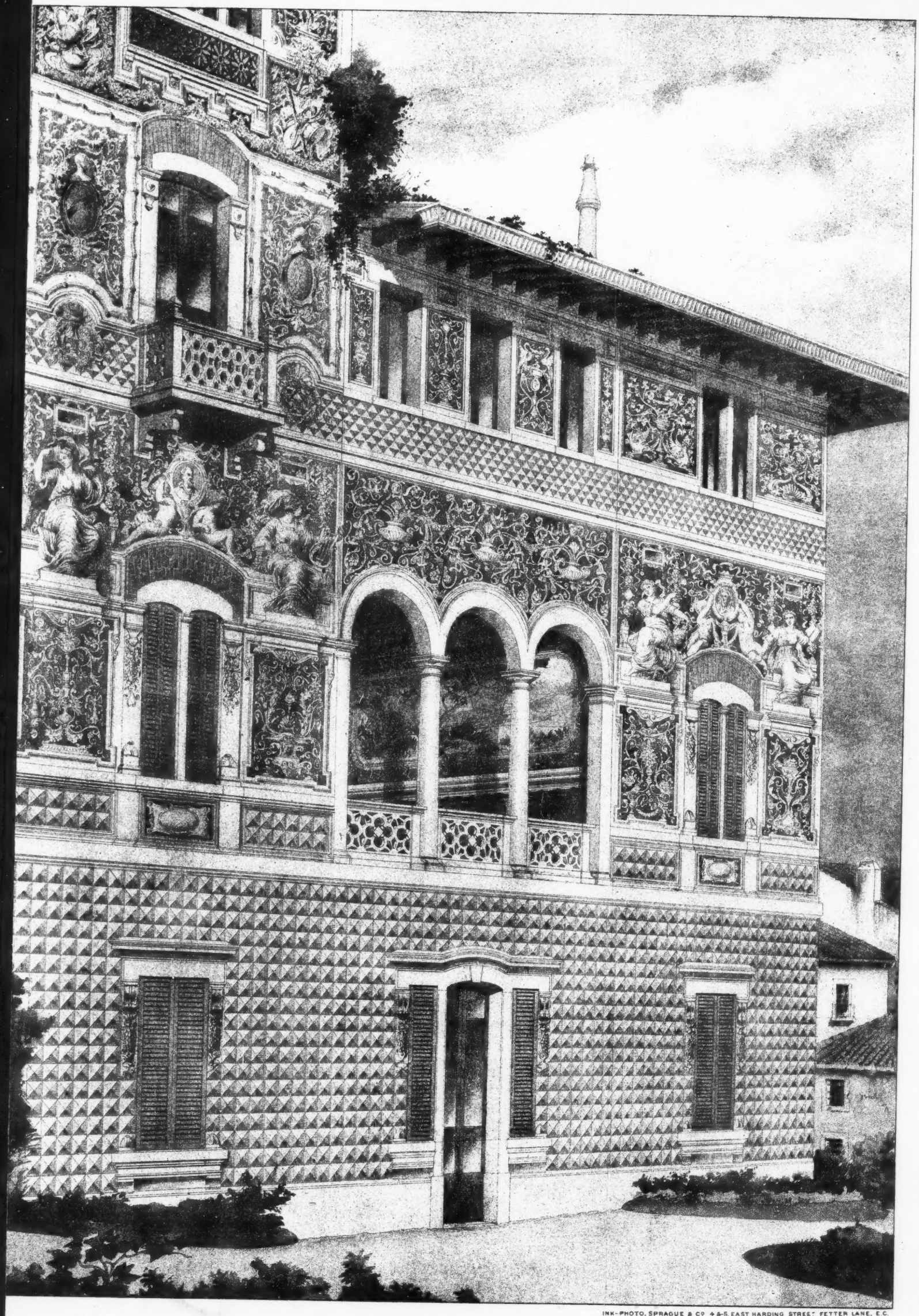

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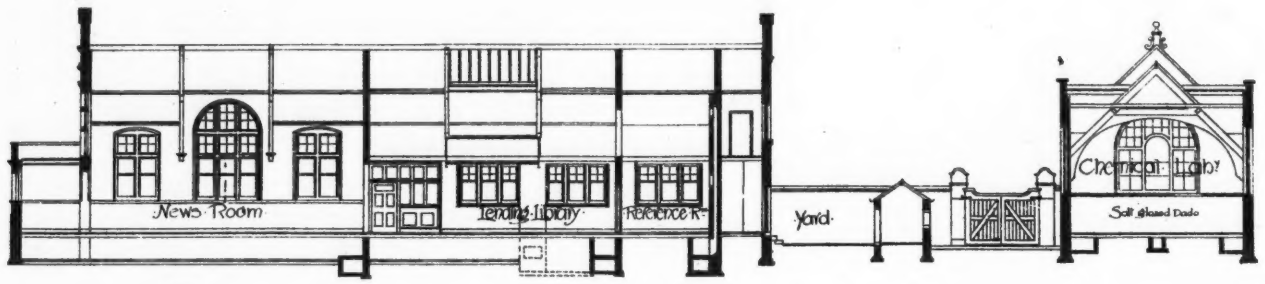
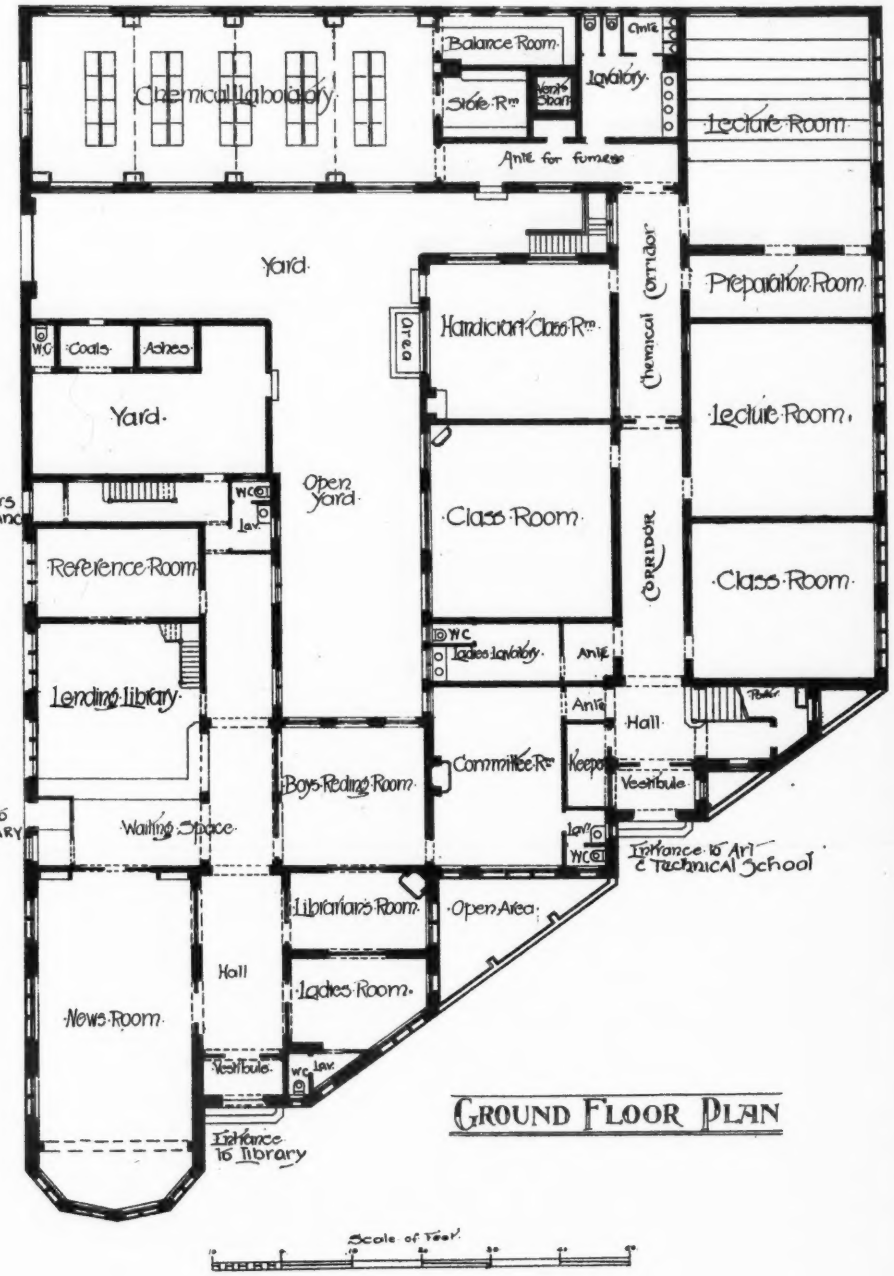


Section A-A

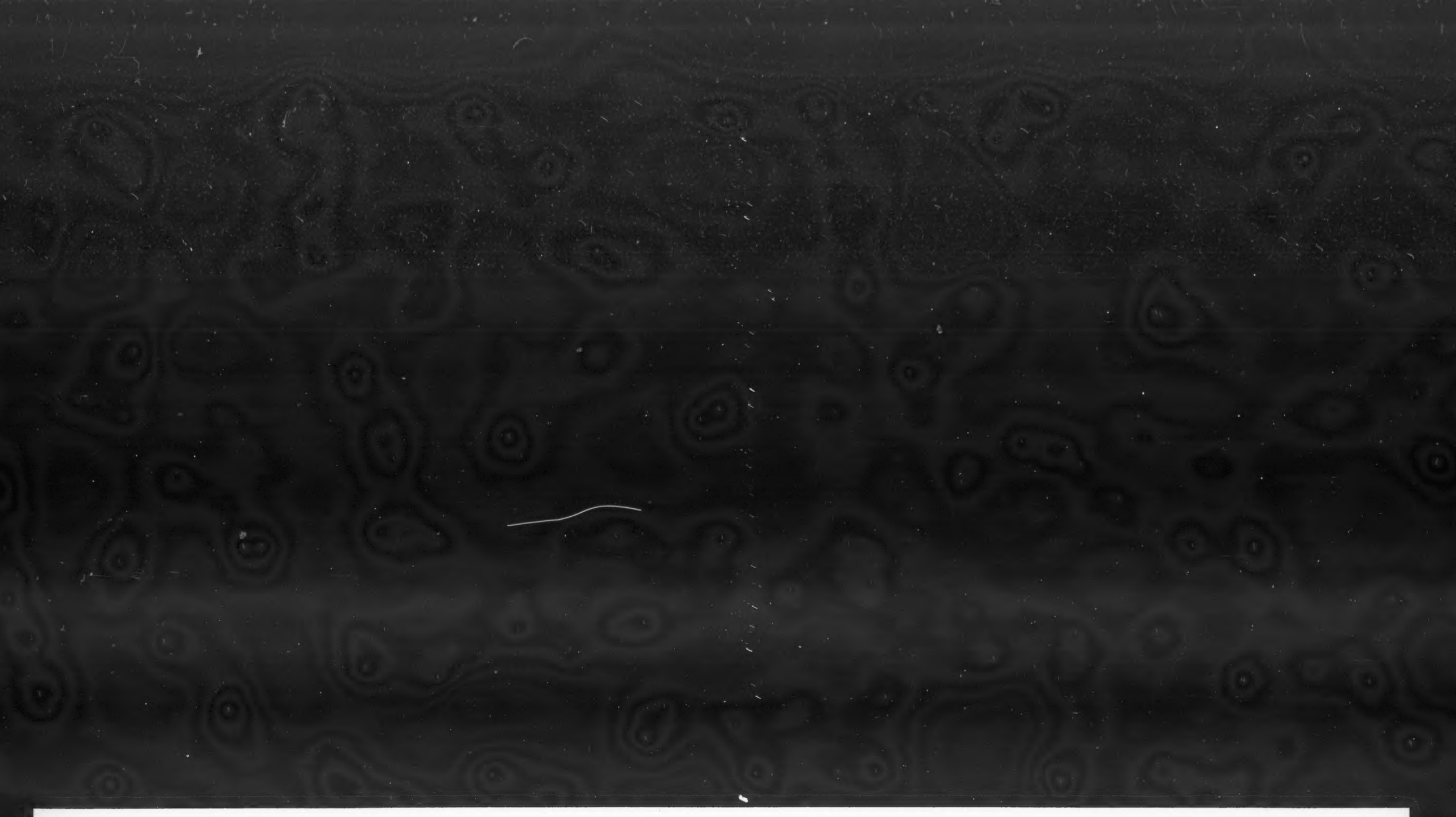
Section C-C

Section B-B



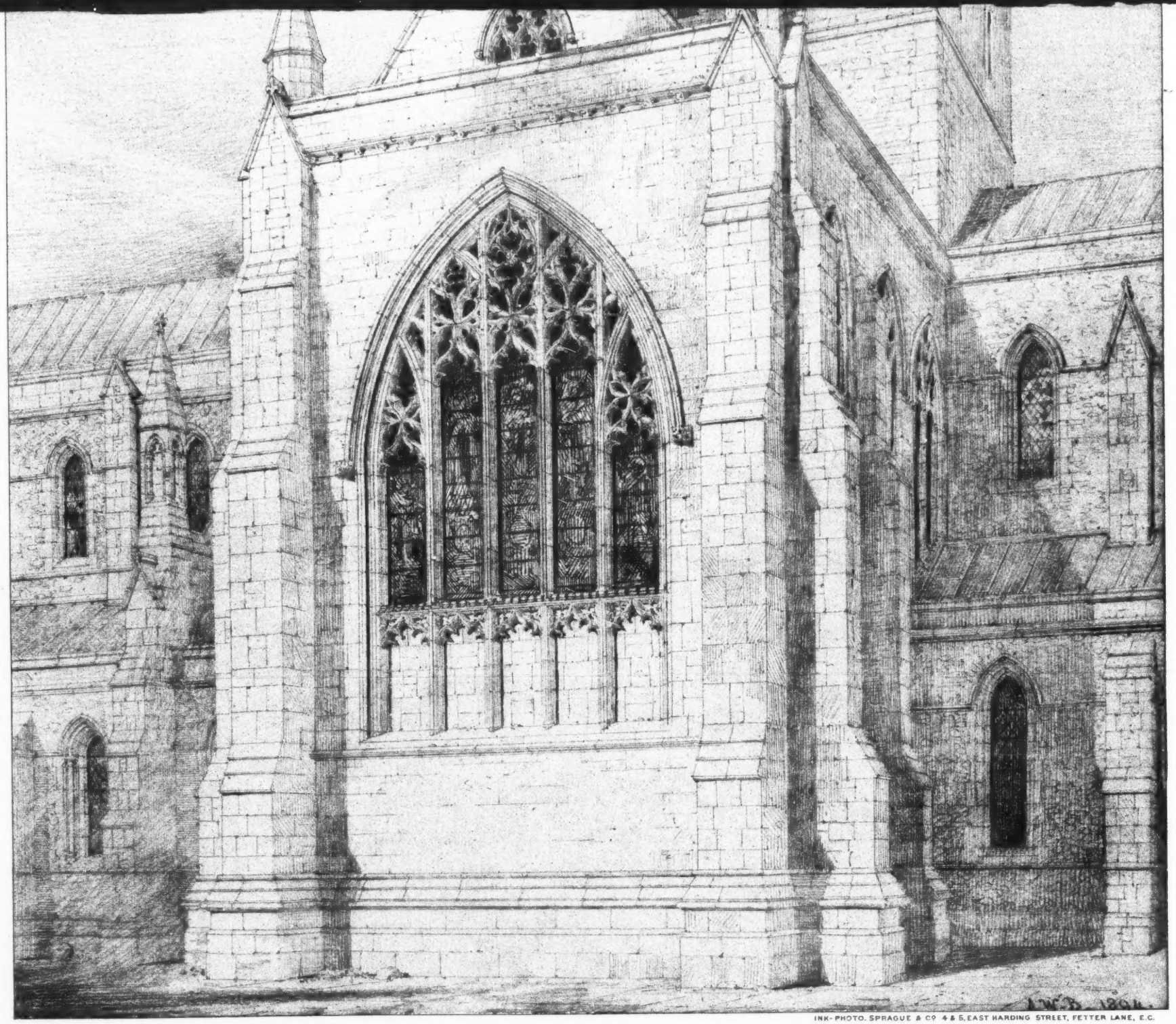
Scale of Feet

PHOTO-LITHO. SPRAGUE & Co 4 & 5 EAST HARDING STREET FETTER LANE. E.C.



SKETCH SHEWING SOUTH TRANSEPT IN 1852

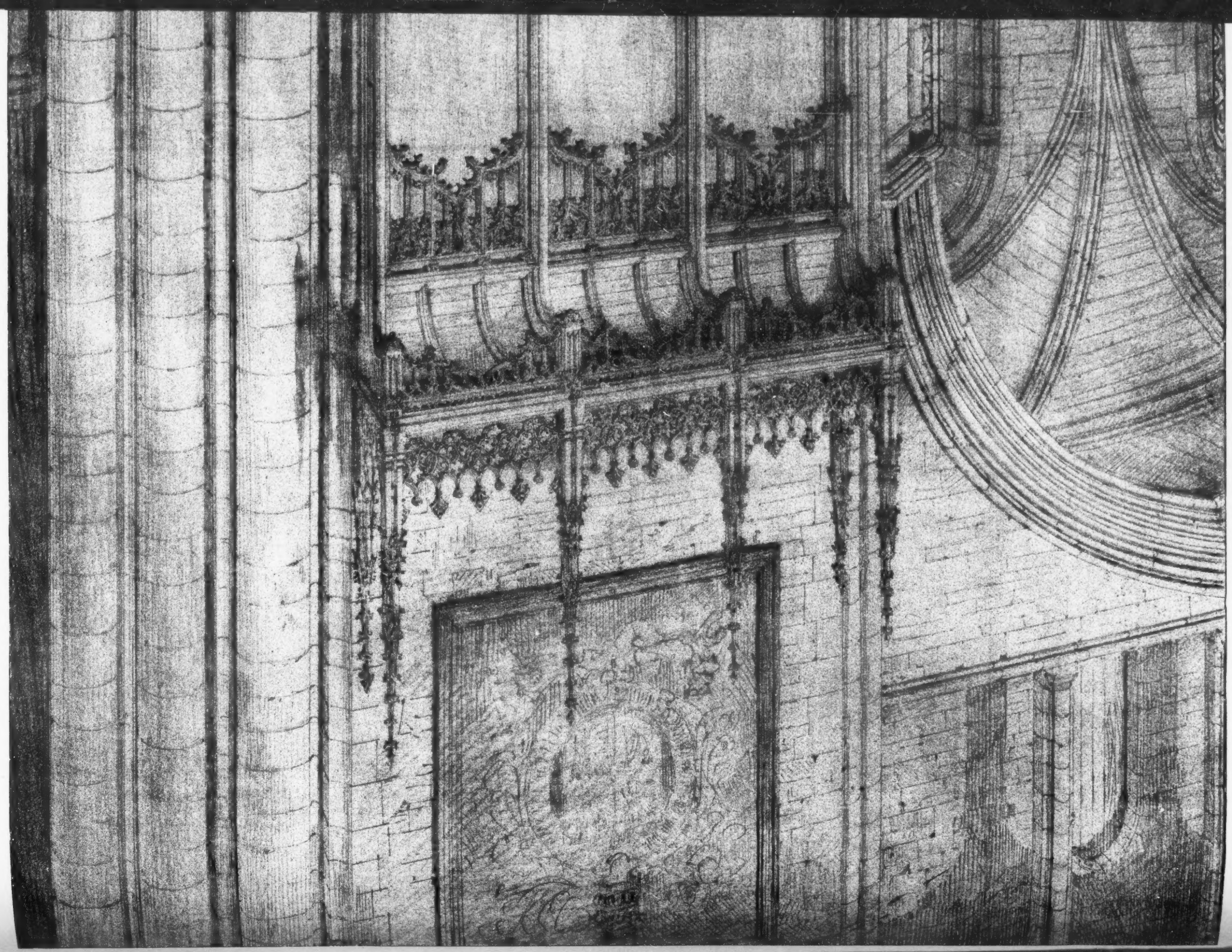
0 5 10 15 20 Feet.

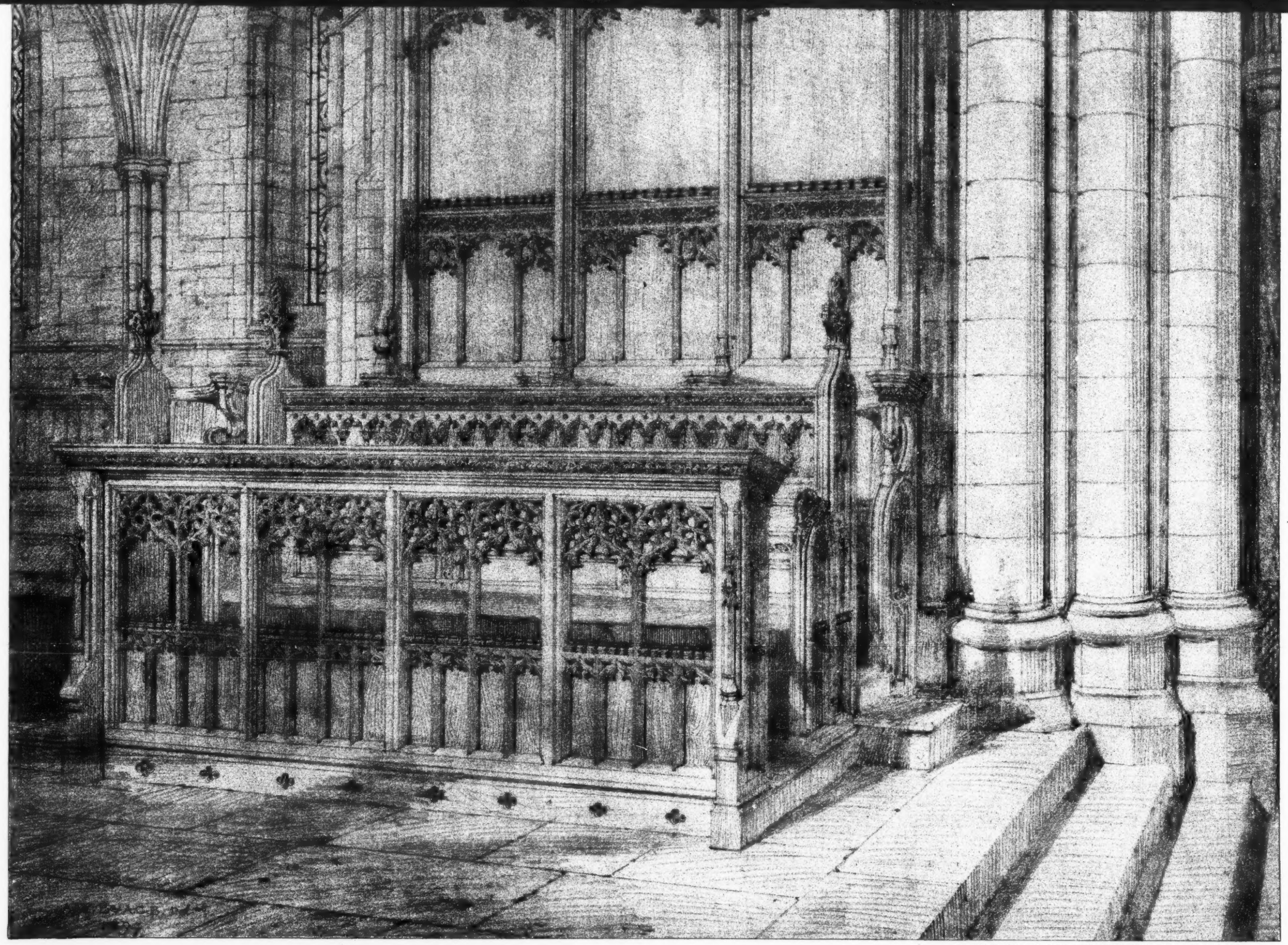


INK-PHOTO. SPRAGUE & Co 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

SOUTH TRANSEPT, ST. SAVIOUR'S, SOUTHWARK.—Sir A. W. Blomfield, A.R.A., Architect.

Royal Academy Exhibition, 1894.





INK-PHOTO. SPRAGUE & Cº 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

MEMORIAL STALLS, ST. SAVIOUR'S, SOUTHWARK.—Sir A. W. Blomfield, A.R.A., Architect.

Royal Academy Exhibition, 1894.